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The Office Treatment Of Rectal Diseases

Explained and Simplified

**Being an Exposition of the Treatment of all Those
Diseases, both Medical and Surgical, of the
Rectum, Anus, and Sigmoid Flexure, the
Cure of Which May be Accomplished
Without Surgical Anaesthesia**

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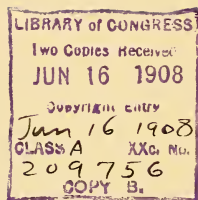
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SOCIETY, AMERICAN PROCTOLOGIC
SOCIETY, ETC.

FOURTH EDITION

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TO
THE FAMILY PHYSICIAN
WHOSE TRIALS AND HARDSHIPS I FULLY APPRECIATE, AND WHOSE
LABORS HAVE FOR MANY YEARS BEEN SHARED BY ME,
THIS VOLUME IS FRATEERNALLY INSCRIBED.

PREFACE.

It is not intended that this book shall take the place of larger works upon the same subject, but that it may be an addition to them, and cover many points that have been omitted. It is the result of many years' practical work as a specialist and teacher along this line, and is a description of methods tried and found valuable.

Diagnosis is discussed very briefly, merely to bring the malady prominently before the reader. Etiology, pathology, anatomy, vague theories and major operations are omitted, and the work devoted merely to treatment, which is discussed in the most terse and practical manner possible.

I have consulted freely the literature of the subject, and have made use of such portions as seemed suitable for a work of this kind.

As surgical procedures are an evolution, and the

result of many minds working along the same lines, it is impossible to give proper credit to any one person; for this reason names of different men who have written upon this subject are not mentioned except in rare instances.

If any excuse were necessary for this work, I would only call attention to the fact that there are many persons who suffer severely from rectal troubles who fear to take chloroform and undergo what to them seems a serious operation, but who would gladly pay for cure by less severe methods. Most of these people could be permanently relieved if their doctor knew how to go about it. The object of this book is to tell him how.

It is my desire that it may be received in the professional spirit with which it is presented.

Omaha, Nebraska, 1901.

PREFACE TO SECOND EDITION.

The first edition of this book was so cordially received by both the professional and the medical press that another is necessary in less than a year from the time the first one was ready for delivery.

The scope of the work has been somewhat enlarged, much new matter having been added, and some changes made in the previous text. It has also been more profusely illustrated.

I wish to express my appreciation of the many kind words that have been received in regard to this little volume; it shows plainly that such a work is desired by the profession, and that it covers a field that is not encroached upon by any similar publication.

Omaha, Nebraska, 1902.

PREFACE TO THIRD EDITION.

The fact that the first and second editions of this work have been sold in less than four years and that a third is now required attests the value that the profession has placed upon it.

The present edition has been thoroughly revised and much new matter added. While the work deals essentially with treatment, I have added more in the way of classification and diagnosis than were in the former editions. This has been done for the benefit of medical students and physicians in general practice who do not have the time to perfect themselves by referring to the more elaborate works written for the benefit of specialists.

I have also added some things that cannot in every instance be done with local anaesthesia, but with the ever widening field into which the different local anaesthetics are being used, there is but very little of the surgery here described but what may be done in this way.

As was stated in the preface to the first edition,

no attempt has been made to write an exhaustive treatise on rectal diseases, as there are many most excellent books to be had on this subject, written by specialists of great ability; but there is no short, practical, concise book suitable for the physician in general practice who does not see enough rectal cases to become familiar with them. Such a want, this book is intended to fill. It is also believed to be of great value to the student who wishes to perfect himself in this work sufficiently to pass a satisfactory examination but does not care to take it up as a specialty.

I have attempted to describe only the most easily done and at the same time satisfactory, operations or methods of treatment, such as I have made personal use of and found satisfactory. Others that may be equally good have been omitted as have also all theories and methods that have not stood the test of time and proof.

Many new cuts have been added in order to more fully explain the text and the mechanical construction has been considerably improved, for which I wish to thank the publishers, The Burton Co., who have shown me favors in many ways.

Omaha, Nebraska, 1905.

PREFACE TO FOURTH EDITION.

It is exceedingly gratifying to both the publishers and the author that the third edition of this work is exhausted in so short a time.

The book has from time to time been enlarged until it now covers a large portion of the field of rectal diseases. It was the intention of the author when getting out the first edition to include only such operations and methods of treatment as could be done in the physician's office or the patient's home without the use of a general anaesthetic. At the request of many friends among the profession its scope has been enlarged so that it includes nearly all of the diseases and methods of treatment generally discussed in books on rectal diseases except major surgical operations.

The book was written primarily for the physician in general practice rather than the specialist, and this fact has not been lost sight of in the present edition. The family doctor is the one to whom these sufferers first apply for relief and he should be prepared to diagnose their troubles and apply such remedies as the conditions found demand.

Considerable new matter has been added to the present volume and several new cuts added.

As was stated in the first edition of this book, surgical procedures and methods of treatment are an evolution, and the result of many minds working along the same line. For this reason it is hard to give credit to any one person. However, I have tried to give recognition for original work done, to all to whom it is justly due. Unfortunately, I have not been given this consideration by others in all cases, as some of my writings have been used almost word for word and no credit given.

I wish to thank the Profession for the very cordial reception given previous editions. It is my earnest desire that the present volume may prove of some value to all who read it.

Omaha, Nebraska, U. S. A., 1908.

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CHAPTER I.

GENERAL CONSIDERATIONS AND DIAGNOSIS

Rectal Diseases Very Common—Great sufferers—General belief in obscurity—Per cent of Cases the Average Physician may Obtain—Equipment—Examination of the Patient—Methods of Diagnosis—Symptoms—Protrusion at Stool—Pain—Hemorrhage—Discharge—Diarrhoea—Constitutional Symptoms—Physical Examination—Position—Instrumental Examination—Importance of advance information—Card used for Record.

I believe any medical man in general practice will agree with me that there is no class of diseases that he is called upon to treat in which he obtains as unsatisfactory results as in those designated "Rectal." All will admit that they are exceedingly common, and that those afflicted are great sufferers, many being entirely unable to perform labor of any kind; these people are not only willing but anxious to be cured, and most of them will gladly pay for permanent relief. Why, then, does not the physician cure them, and thus not only largely increase

his earnings, but receive the grateful appreciation of his patrons?

The reason in most cases is, that the general practitioner thinks there is something mysterious and obscure about these troubles, making them hard to understand, and harder still to treat. I admit that many of them are difficult to diagnose, and that the treatment is often very perplexing, even to those who limit their practice to this kind of work, but after many years' experience, I am confident that fully fifty per cent of these cases can be properly diagnosed and treated by the average physician, provided he will take the trouble to go about it in the right way.

Many seem to think that a large number of special appliances and costly instruments are needed, and that no one but a specialist is capable of using these after they are purchased. In many instances this is true, but for most of the cases seen by the general practitioner, only the ordinary instruments usually at his command are needed.

A wooden table, such as any carpenter can make, will do in place of an expensive operating chair or table. A cheap irrigator can easily be made by removing the bottom from a large gallon bottle and

hanging it inverted in a network of string or small chain with the cork securely wired in and a glass tube inserted through it, to which four or five feet of rubber tubing is attached.

Some sort of closet should be arranged so that enemata may be given. There are many cheap forms of these on the market, or one can be made at small expense. This can be shoved under some piece of office furniture, or surrounded by a neat curtain so that it will be hidden from view when not in use. It is not often that it will be needed, but it is indispensable in certain cases. The use of this piece of furniture brings up an objection often made by physicians against treating these cases, that "it is dirty work." I admit that there are some unpleasant features about it, as there are about any work that one may adopt, but I am sure that the treatment of rectal diseases is not as unpleasant as that of genito-urinary or obstetrical work.

People who consult their doctors about these troubles will usually clean themselves pretty thoroughly before coming, even though not ordinarily neat, and if the doctor can, as is usually the case, make an appointment with them in advance, he can tell them to wash out the bowels well with large

quantities of hot water, and also to use plenty of water on the outside. This need not offend even the most sensitive, as it can be explained that it is necessary to "relax the parts." If this is well done, this portion of the anatomy is as clean as any other part of the body, and should it be necessary to give an enema in the office, nothing comes from the patient except the water introduced.

A good light is necessary, and daylight is the best, although this may be aided by artificial means. The use of the little electrical lamps that can be carried around is often a great help, but is not an absolute necessity.

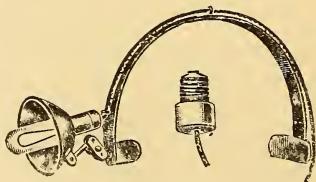


Fig. 1. Electric head light.

Other instruments needed will readily be suggested, such as T-forceps, artery forceps, probes, directors, scissors, knives, hypodermics, etc.

As to the best way to make an examination, I believe it is always wise to let the patient tell his or her own story uninterruptedly. They usually think

they have piles, and often tell much that is unnecessary, but this serves to wear off the embarrassment, and a few well-directed questions in conclusion will clear up the diagnosis as far as it can be done in this way. It seems hardly necessary to say that no case, however trivial it may seem, should be treated without a careful examination. Some most amusing and serious blunders have come under my notice from neglecting this.

Lady patients should, if possible, be accompanied by their husbands, if married, otherwise by some female friend who can assist them in arranging their clothing, getting on the table, etc. After this has been done, and the patient is lying on her left side covered by a sheet, the doctor can make his examination without embarrassment to either party. He may be able to arrive at a proper diagnosis at a glance, or only after considerable trouble.

It is well to state in this place what can readily be seen and felt with the unaided eye and finger. There can easily be seen external hemorrhoids, the external opening of fistulae, the thickened or parchment-like or eczematous skin of pruritus. The moist appearance indicating a catarrhal condition of the bowel farther up, fissures, partly prolapsed internal

hemorrhoids, venereal diseases, abscess, and after a little experience, the bulging or unusually prominent appearance of the parts due to internal hemorrhoids may be recognized.

There may be felt upon the outside the old tracks of fistulae, and by gently pulling the anal opening apart with the thumb and finger, fissures and irritable ulcers are recognized that are too high to come into view without doing this. Occasionally the lower part of polypoid growths, or pinworms, may be seen. By introducing the oiled finger into the bowel there may be felt, first the condition of the external sphincter muscle. It will be found to vary greatly in different persons.

In the aged, infirm and debilitated it will in most cases be found weak and relaxed, as it is also in many persons who have been troubled for a long time with large internal hemorrhoids, due to their constant protrusion and return, which gradually weakens the muscle and causes it to lose to a large extent its strength and firmness.

In the young and vigorous the muscle will be found to be firm and resisting, contracting tightly on the intruding finger. Sudden force should not be used, but gentleness will overcome the resistance.

Pain is usually not complained of in the healthy muscle, but if a fissure or irritable ulcer be present it will be very severe.

Farther on may be felt the internal opening of fistulae, the depressed rough edge of ulcers, polypi, and strictures if not too high, hemorrhoids if well developed, although it requires considerable experience to distinguish these with the finger, and in most cases it cannot be done even by the most expert examiner.

By pressing the finger as far as possible all of that portion of the bowel likely to be diseased may be felt, and experience will soon teach one to distinguish the prostate, neck of the bladder, coccyx, uterus, etc. Some experience is required to make out all of these, but by frequent examinations one soon becomes quite expert.

In examining women the finger may be introduced into the vagina and the whole anterior wall of the bowel turned out. In this way internal hemorrhoids, and any other abnormal conditions, in most cases, may be readily recognized.

Another point that should not be overlooked is that there may be a complication of diseases. It would certainly be very unwise to treat a patient

for external piles and overlook a stricture. It is not uncommon to have patients come for treatment for some disease that is wholly dependent upon some other trouble that to them is unimportant, such as a pruritus ani due to a vaginal discharge, or a prolapse caused by internal piles which force the mucous membrane down but do not themselves protrude.

I have known a patient to be treated in a hospital for three weeks for this disease, while the hemorrhoids which were producing it were undiscovered.

METHODS OF DIAGNOSIS.

While much may be learned from the description of symptoms as given by the patient, it is only preliminary to the examination that is to follow. It is far too often the case that the family physician makes no effort to learn the exact condition other than as given by the patient and as a result the treatment is carried out along wrong lines. It is not uncommon for patients to go to specialists for treatment thinking they have hemorrhoids, when they are really suffering from an advanced stage of cancer, this too, after having received much treatment from their home doctor.

Taking up the subjective symptoms first, those most often complained of will be discussed.

Protrusion at Stool. This causes the patient to seek the advice of a physician more often than any other one thing. It may be caused by hemorrhoids, prolapse, polypoid growth or other tumor. As the diagnosis of each of these conditions is to be found in the proper place, it is only referred to here to show the futility of trying to make a correct diagnosis without examination.

Pain. This will often suggest pretty accurately the nature of the disease. If of recent date it is probably of an inflammatory nature as an abscess. If of long standing, it may be carcinoma, a tumor high in the bowel, a syphilitic deposit, or a chronic ulcer. The character of the pain may be important; if of a throbbing character it shows inflammation and the probable formation of pus or possibly the strangulation of internal piles; if of a pricking or stabbing nature it might indicate some foreign body. The time at which it occurs may indicate the cause; if it follows a bowel movement and lasts from two to four hours and is of a sharp lancinating character it is almost surely due to a fissure.

Hemorrhage. When blood is passed from the

bowel it nearly always comes from capillary piles or from venous tumors that are constricted by the sphincter muscle so that the blood is forced out of the vein wall. In either case the blood is lost at stool. If the amount is small and is noticed immediately following a bowel movement, and is accompanied with pain of a lancinating, aching character it probably comes from a fissure. If it comes on independently of the bowel movements it may be due to carcinoma or ulcer or it may come from the bowel above the rectum. If the attack comes on suddenly and has not been noticed before it may be due to some foreign body that has lacerated the bowels.

Discharge of Mucus, Pus, etc. Mucus may be due to internal piles, catarrhal proctitis, or anything that causes an irritation, as polypoid growths, hard dry fecal matter, etc. Pus is from an internal incomplete fistula or abscess, and pus mixed with blood is from an ulceration, a carcinoma, tumors or stricture. The symptoms accompanying the discharge, as pain and the length of time that it has existed, will assist in the diagnosis.

Diarrhoea. A diarrhoea due to rectal disease is generally caused by an acute proctitis and is accom-

panied by great pain, tenesmus, and symptoms of heat, both local and general. If the diarrhoea alternates with constipation it may indicate a stricture. If there is constipation so that the fecal matter becomes dry and hard it may so irritate the bowel wall that an explosive diarrhoea is the result. After this has subsided the conditions that produce it gradually return and it occurs again.

Constitutional Symptoms. Many rectal diseases have a striking effect on the general health and the constitutional symptoms are as marked as the local ones. Among these are the cancerous cachexia, nervousness, anemia and loss of weight. Any one or all of these may be present.

Cachexia. This will at once suggest cancer and, if combined with loss of weight extending over a period of several months, is quite a sure indication of this disease.

Nervousness. Rectal diseases in general are subject to many reflex nervous symptoms caused especially by hemorrhoids, fissures and those that involve numerous nerve filaments. For further information the reader is referred to the chapter on the reflex action of rectal diseases.

Preparation of the Patient. In nearly all cases it is better to have the patient thoroughly wash out the bowel before coming to the office, but in some diseases it is important to make the examination first in order to ascertain whether or not the rectum contains fecal matter, blood, pus, etc. The internal opening of an incomplete fistula might not be found if all the pus is washed out just before the examination.

After having made the examination an enema should be given and the patient requested to retire to the toilet room and strain as hard as possible to bring out any protrusion that may be present. They should be cautioned not to push back anything that may be out before getting on the operating table.

Position of Patient. For all general purposes the left lateral position is the best. It is the most comfortable for the patient and fills all requirements on the part of the doctor. In persons who are very fleshy the lithotomy position is much to be preferred as the buttocks do not obstruct the view as they do when the patient is lying on his side. When the lithotomy position is used it should be an exaggerated form with the head lower than the body and the legs and thighs well flexed. When it is necessary

to introduce the sigmoidoscope this position will prove the most satisfactory and much more comfortable to the patient.

This position is also very desirable when it is necessary to examine other organs, as the vagina, bladder, uterus, or the contents of the abdomen.

I have seldom found it necessary to ask a patient to assume the knee-chest posture. This position is very uncomfortable and embarrassing, especially to females. Still it has advantages not possessed by any of the others, one of which is, that owing to the flexure of the lumbar portion of the spine the pelvis is tilted backward thus exposing the anal region more fully than in any other way. It also has the advantage of having all of the abdominal organs fall away from the pelvis by the force of gravity, thus straightening the rectum somewhat.

In some cases where there is a protrusion that recedes easily it is important that it be examined while the patient is in the squatting position, otherwise it will slip back before he can get on the table and a correct diagnosis will be impossible.

Instrumental Examination. As a rule but very little information can be obtained by an examination with the speculum. They simply push the parts

out of sight behind the broad steel blades and the true condition is not seen, or if an instrument is used with wire blades the tissue falls between the wires at the verge of the anus so that the parts above are not seen at all. At best but two or three inches are exposed to view and all that can be seen may easily be recognized by the educated finger without the speculum.

When to this is added the fact that this instru-

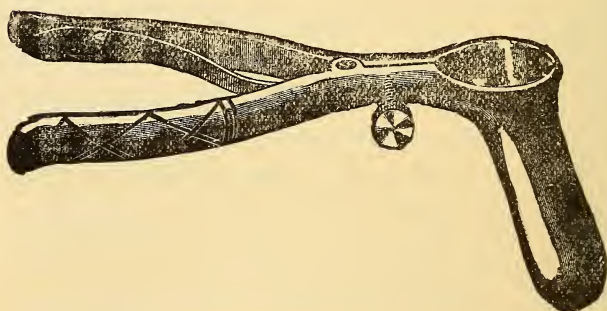


Fig. 2. A good speculum for general use.

ment is exceedingly painful it is seen that its use is very limited and is seldom called for except when general anaesthesia is induced. Still a number of these specula should be kept on hand and in cases where the sphincter is not too tight and no inflam-

matory condition exists they may be used with considerable satisfaction. The small conical slide speculum does not offer the same objection that the others do and for treating hemorrhoids by injection, making applications to ulcers, fissures, etc., it is most excellent.

In 1895 Howard Kelley described a set of long straight tubes which could be introduced into the upper part of the rectum, thus showing plainly practically all of the organ up to the sigmoid. Since that time Law, Tuttle, Pennington and others have

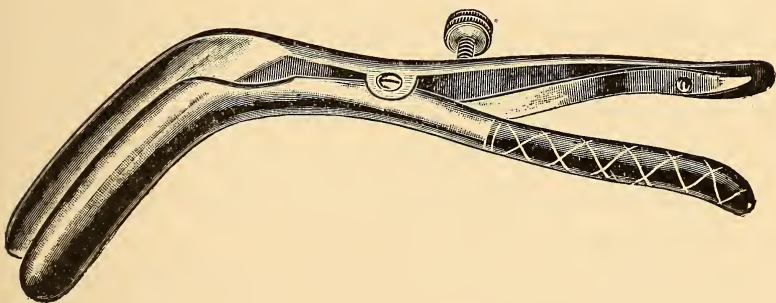


Fig. 3. Sigmoid Speculum, with long, smooth blades.
Easy to introduce and not very painful.

improved upon the method until now they are very complete.

As now arranged, a glass cap is screwed over

the outer end and a rubber bulb attached by means of which air may be forced into the bowel, thus ballooning it so that all folds in the mucous membrane are effaced and the entire surface brought into perfect view. Anaesthesia is not required in using these tubes and if the knee-chest or lithotomy position is assumed but little if any pain will be experienced.

After the instrument has passed the internal sphincter muscle the obturator should be removed and the air will at once rush in and balloon the lower part of the rectal pouch but the upper portion and the sigmoid will not dilate except by forcing the air in. Before the instrument is removed the cap should be taken off and pressure made on the abdomen to get all the air possible out of the colon, otherwise the patient may suffer severely from colic. One of these tubes should be made quite short, not to exceed two inches, for examining the lower part of the bowel.

While any ordinary table or operating chair will do to make examinations on, I have had one made to order that, it seems to me, is as near perfect as it is possible to get it. This is made of steel and a heavy coating of enamel baked on. There are no cracks, hidden corners or places not easily

reached, for dust and dirt to gather. It is provided with a drain which runs all water or bloody discharges into a vessel hung on a hook on the under side of the top where it is entirely out of sight.

There is a rubber covered sliding shelf which is used for a step, making it very easy to get on or off the table. This shelf is very useful also in making examinations as a cushion may be placed on it and the patient told to lean over with his knees on the cushion and his chest on the top of the table, giving a partial knee-chest position which is one of the best there is in many forms of rectal examinations.

In examining female patients it is important that all the pelvic organs be carefully looked after. Many times the uterus, ovaries or tubes are more at fault than the rectum and the examiner who is not competent to diagnose and treat all abnormal conditions found here is not as a rule competent to treat any of them.

Exploratory Laparotomy. If there is strong reason to suspect disease of the bowel too high to diagnose from below, the abdomen should be opened and the true condition ascertained. Arrangement may be made to operate at the same time if the con-

sent of the patient and friends is obtained and the conditions justify it; or this may be postponed until some future time as thought best. With present methods of asepsis there is but little danger in an

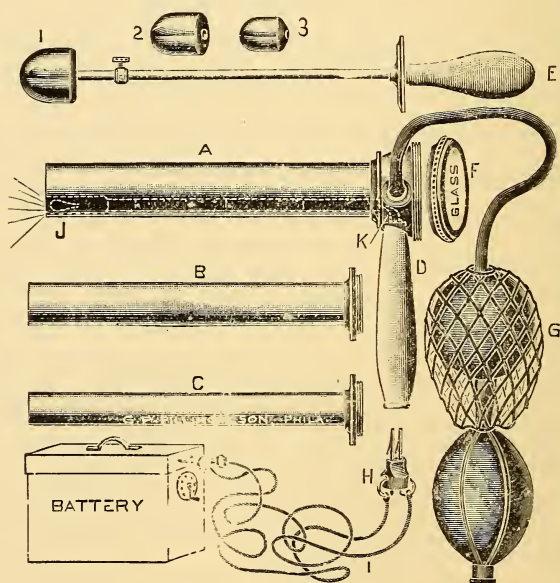


Fig. 4. Law's Pneumatic Proctoscope. E, 1, 2, 3, obturators; A, B, C, tubes, D, handle; F, cap with glass window; G, inflating bulb; H, battery connection; J, K, electric light and insulating rods.

exploratory incision.

I give below a copy of advance information that I have had printed in the form of little slips and

when I know that a patient is coming to see me for the first time I give or send one to him and in this way find that he is almost invariably well prepared for an examination.

I also give the form of some cards that I keep on hand to record my cases. These cards are kept arranged in alphabetical order and are a very great convenience for future reference. They can be filled while the history is being taken and are but little bother. It is a great convenience in case someone whom you treated a year or more ago writes or calls on you, to be able to look the matter up at once and not have to depend on memory. I carry a few of these in my pocket and should a case be seen in the hospital or at the patient's home the record can be taken. In case there is not enough room the back may be used. The letters "M. F." stand for male or female, and "M. S. W." for married, single or widow, (widower). Simply cross out the ones not wanted.

ADVANCE INFORMATION.

If you are coming to me for treatment of rectal disease, please observe the following advice:

Two days before you expect to be in my office for examination take a good physic. It is not so very important what it is so it acts freely, but two or three of the compound cathartic pills which any druggist will furnish you will be the best. This should be followed the next day with a few small doses of Rochelle salts, say a heaping teaspoonful in a cup of water, preferably hot. The evening before coming, take one or more injections of hot water, to which has been added a little soap. If you are not to get to the office until afternoon it is well to repeat the injection in the morning before coming.

A little trouble on your part will save you considerable annoyance and possibly a day or more of time, besides being much more pleasant for both of us.

Please keep this slip for future reference, if you are not coming now.

R. D. MASON, M. D.,

Brandeis Block, corner 16th and Douglas Sts.,
Omaha, Neb.

<i>Name and Address</i>		<i>Occup</i>
<i>Age</i>		<i>M. F., M. S. W., Date</i>
<i>Family History</i>		
<i>Examination</i>		
<i>Diag</i>		
<i>Treatment</i>		

CHAPTER II.

ANATOMY

The essential points—Bones of the Pelvis—The Pelvis—
The Muscles—Sphincter Ani—Internal Sphincter—
Levator Ani—Coccygeus—Perinei — The Rectum—The
Arteries—The Veins—The Nerves—The Perineum and
Ischio—Rectal Region—The Female Perineum.

In order to have a correct knowledge of rectal diseases and their treatment it is essential that a clear understanding be had of the normal anatomy of the parts. It is not necessary to go into the subject very carefully and describe each part in detail as it would take up too much space, but the essential points will be gone over with sufficient clearness to give a good working knowledge of the parts.

BONES.

The bones of the pelvis consist of the two ossa innominata, which bound it on either side and in front; the sacrum and coccyx which complete it

behind. These form a broad, cup-shaped cavity which is said to resemble a basin. It is the most strongly constructed of the bony frames of the body and is interposed between the spine, which it supports, and the lower extremities upon which it rests.

The *pelvis* is divided into two cavities by the ilio-pectineal line, that above this line being called the false pelvis and that below the true pelvis. Most of the organs under consideration are in the true pelvis.

MUSCLES.

Beginning from the outside the first muscle is the *sphincter Ani Externus* or external sphincter. This is a true sphincter and surrounds the terminal portion of the large intestine. It arises from the dorsal aspect of the tip of the coccyx and also the ano-cocygeal ligament; and after dividing to surround the anus, is inserted into the central point of the perineum. This muscle consists of two strata, a superficial and deep. The former is mostly subcutaneous and the fibres are inserted into the skin while the deep fibres are inserted into the outer layer of the rectal wall. This is a purely voluntary muscle, and, being under the control of the will, is of the utmost importance. It relaxes readily during

the passage of feces and contracts to its former position after the bowel has been emptied. While it is a voluntary muscle it is not entirely under the control of the will, but is largely so.

Because of its exposed position it is very subject to injury and often becomes hypertrophied and more or less firmly contracted so that it offers considerable resistance to the passage of feces, and divulsion or stretching is necessary to overcome the resulting constipation.

The nerve supply is from the inferior hemorrhoidal branch of the pudic and the perineal branch of the fourth sacral.

Internal Sphincter. This muscle is simply an aggregation of the lowermost circular muscular fibres of the rectum. It is an involuntary muscle and keeps the canal closed when the will power is not under control, as in sleep, anaesthesia, etc. The division of this muscle will occasionally result in partial incontinence, although if properly done this is not likely to occur.

There is said to be a third sphincter above this but it is of so little importance that it will not be further considered.

Levator Ani. The description of this muscle as

given by Grey is as follows: "The Levator Ani is a broad, thin muscle, situated on each side of the pelvis. It is attached to the inner surface of the sides of the true pelvis, and, descending, unites with its fellow of the opposite side to form the floor of the pelvis cavity. It supports the viscera in this cavity, and surrounds the various structures which pass through it." It arises, in front, from the posterior surface of the body and the ramus of the pubes, on the outer side of the symphysis; posteriorly, from the inner surface of the spine of the ischium; and between these two points, from the angle of the division between the obturator and recto-vesicle layers of the pelvic fascia at their under part; the fibres pass downward to the middle line of the floor of the pelvis, and are inserted, the most posterior fibres, into the sides of the apex of the coccyx; those placed anteriorly unite with the muscle of the opposite side, in a median fibrous raphe, which extends between the coccyx and the margin of the larger portion of the muscle, are inserted into the sides of the rectum, blending with the fibres of the sphincter muscle; lastly the anterior fibres, the longest descend upon the side of the prostate gland to unite beneath it with the muscle of the opposite side, blending with

the fibres of the external sphincter and transversus perinaei muscles at the tendinous centre of the perineum." This muscle forms the floor of the pelvis, dividing the contents of the true, from that of the false, pelvis. Its function is to hold the contents of the upper pelvis and abdomen away from the anal outlet. It also acts by compression as an aid in forcing the contents of the bowel out in a defecation and at the same time by the contraction of its fibres the neck of the bladder is compressed and the urethra closed. It receives its nerve supply from the perineal branch of the fourth sacral and the deep branch of the perineal division of the pudic.

Coccygeus. "This muscle is behind and parallel with the preceding. It is a triangular plane of muscular and tendinous fibres, arising, by its apex, from the spine of the ischium and the lesser sacro-sciatic ligaments, and inserted, by its base, into the margins of the coccyx and into the sides of the lower piece of the sacrum. This muscle is continuous with the posterior border of the Levator Ani, and closes the back part of the outlet of the pelvis. Its action is to raise and support the coccyx after it has been pushed back during the defecation or parturition." The nerve supply same as the Levator Ani,

Transversus Perinei. "This is a narrow muscular slip, which passes more or less transversely across the back part of the perineal space. It arises by a small tendon from the inner and fore side of the tuberosity of the ischium, and, passing obliquely forward and inward is inserted into the central tendinous point of the perineum, joining in this situation with the muscle of the opposite side, the sphincter ani behind, and the accelerator urinae in front." In the female this muscle is inserted into the side of the sphincter vagina, and the Levator Ani into the sides of the vagina and rectum.

THE RECTUM.

This constitutes the lower eight or nine inches of the large intestine and extends from the left sacro-iliac-synchondrosis, at which point it is a continuation of the sigmoid flexure, to the anus. This organ is not straight but has three distinct curves as follows: From its starting point at the left of the spinal column it extends downward and backward into the hollow of the sacrum and at the same time it curves to the right so that it lies in the center of the body instead of at the left; after reaching the hollow of the sacrum it curves forward until it reaches the tip

of the coccyx when it again turns backward until it reaches the outside. It somewhat resembles the let-



Fig. 5. Plaster cast of rectum, showing curves.

ter S and these curves should be borne in mind when attempting to pass instruments. For facility of description the rectum is divided into three parts as follows: The upper portion from the starting point

to the middle of the third piece of the sacrum; the second from this point to the tip of the coccyx; and the third from there to the lower end.

Upper Portion. This is from four to five inches in the adult and is entirely covered by peritoneum which forms a meso-rectum which attaches it to the back part of the pelvis. As before stated it is directed downward, backward, and to the right, and ends at the middle of the third piece of the sacrum. This portion is very similar to the bowel above and some claim should not be classed as part of the rectum.

Relations. Coils of small intestines, the bladder when distended, the uterus when enlarged, and the ovaries and tubes are in front and extending on each side. Behind lie the three pieces of the sacrum, the pyriformis muscle, and the meso-rectum containing the hemorrhoidal vessels. On the left are the ureter and branches of the internal iliac artery.

Middle Portion. This is about two and a half inches long and extends from the middle of the third piece of the sacrum to the tip of the coccyx. The most of this portion is covered by peritoneum in front and at the sides but not behind; for this reason the rectum is not attached to the pelvis at this

point, having no meso-rectum, but is freely movable. In front the peritoneum in the male is reflected on to the bladder, and in the female on to the vagina forming Douglas pouch.

Relations. In front, in the male, the recto-vesical pouch of the peritoneum, the base of the bladder, the seminal vesicles, and the prostate. In the female, Douglas pouch and the posterior wall of the vagina. Behind there is nothing but the concave portion of the sacrum and some loose areolar tissue together with a few lymphatic glands.

Lower Portion. This measures about one and a half inches and extends from the tip of the coccyx backward to the outside. It is surrounded by both the internal and external sphincter muscles which reduces it to a narrow closed canal. This is the part that is the most exposed to traumatism and where we may expect to find hemorrhoids, fistulas, fissures, etc. There is no peritoneum around this portion.

Relations. In front in the male are to be found the apex of the prostate, the base of the bladder, the triangular ligament, the perineal body, and the urethra. In the female the lower part of the posterior wall of the vagina and the perineal body. Behind are the ano-coccygeal ligament, the posterior fibres

of the levators ani and the origin of the external sphincter. On each side are to be found the ischio-rectal fossa.

Structure of the Rectum. There are four coats, the serous, muscular, sub-mucous and mucous.

The Serous Coat. This is the peritoneum and has been described in speaking of the curves to which the reader is referred.

Muscular Coat. The muscular fibres are arranged in two distinct layers, the outer longitudinal and the inner circular. The longitudinal is a continuation of that found in the colon and is divided into three layers; the outer is inserted into the pelvic fascia, the middle blend with those of the levator ani, and the internal pass down by a series of fine tendons between the internal and external sphincter muscles and are inserted into the skin at the anal margin. The circular fibres are for the most part uniformly distributed but at the lower end they are gathered into a thick band constituting the internal sphincter, which has been described.

Sub-mucous Coat. This is the coat in which the vessels, nerves and lymphatics are to be found. It is a loose mass of areolar tissue inside the mus-

cular layer and upon which rests the mucous membrane.

The Mucous Membrane. This is very vascular and moves freely on the sub-mucous tissue. When at rest it is thrown into folds which are mostly effaced when the bowel is distended. Certain of these are not effaced during distention, these are called

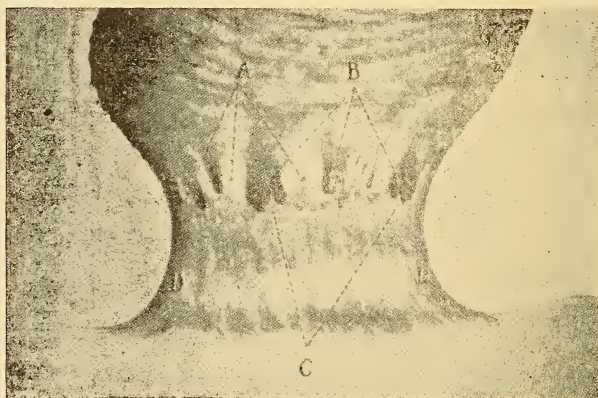


Fig. 6. The anal canal. A, columns of Morgagni; B, semilunar valves or crypts of Morgagni; C, dentate border, marking upper limits of anus and surmounted by papillae; D, Hilton's white line.—Tuttle.

Houston's folds. Immediately above the muco-cutaneous junction are other folds running in a longitudinal direction and called the "*Columns of Mor-*

gagni." These are no doubt caused by the constricting effect of the sphincter muscle. Between these columns are to be seen folds of mucous membrane called pockets and more correctly known as the "*Valves of Morgagni.*" These so-called pockets are a source of great profit to many irregular practitioners as they tell their patients of the direful results that will ensue if they are not cut out. They promise to cure anything from corns to consumption by cutting out these pockets. There is some doubt as to their exact function, but it is now believed by most authorities that they are to gather and hold mucus to lubricate the fecal mass in passing out and thus protect the mucous membrane from injury. Ball says they are often torn loose at the edges by hard fecal passages and gradually work down in the form of a hard mass called a sentinel pile. The torn tissue above them results in an irritable ulcer.

ARTERIES.

Superior Hemorrhoidal. This artery is a direct continuation of the inferior mesenteric and descends into the pelvis between the layers of the meso-rectum, crossing, in its course, the ureter and the left common iliac vessels. Opposite the middle of the

sacrum, it divides into two parts which descend one on each side of the rectum, where they divide into several small branches which are distributed between the mucous and muscular coats of that tube, nearly as far as its lower end; anastomosing with each other, with the middle hemorrhoidal arteries, branches of the internal iliac, and with the inferior hemorrhoidal branches of the internal pudic.

The student should especially note that the trunk of the vessel descends along the back part of the rectum as far as the middle of the sacrum before it divides, this is about a finger's length or four inches from the anus. In operating on this part of the bowel this should be remembered and great caution be used.

The Middle Hemorrhoidal Artery is a branch of the anterior division of the internal iliac. It is distributed mainly to the middle portion of the rectum and its branches anastomose freely with the superior hemorrhoidal. It supplies chiefly the muscular layer of the bowel.

The Inferior Hemorrhoidal Artery is a branch of the internal pudic as it passes above the tuberosity of the ischium. It crosses the ischio-rectal fossa and is distributed to the muscles and integument of the

anal region. This artery or some of its branches are often cut in operations for fistula, but as they are small they seldom require ligating.

VEINS.

The veins of the rectum are very numerous and are known as the superior, middle and inferior hemorrhoidal to correspond with the arteries. These are in the form of a venous plexus rather than individual veins.

The Superior Hemorrhoidal vein collects the blood from the rectum itself, and not much from the surrounding parts, and empties it through the mesenteric into the portal system. The middle and inferior hemorrhoidal veins collect the blood from the external surface of the anus and skin and return it into the vena-cava. The dividing line is said to be the muco-cutaneous junction. For this reason it is easily seen that internal hemorrhoids are always an affection of the superior hemorrhoidal veins while the external are always connected with the middle or inferior hemorrhoidal. Slightly above the muco-cutaneous junction there are many small venous pools of blood in the shape of little lakelets, each distinct in itself and yet freely anastomosing

with the others. They are just under the mucous membrane and extend entirely around the bowel. About a finger's length above the anus, venous branches enter the bowel wall through holelike aper-



Fig. 7. Showing venous lakelets at the termination of hemorrhoidal veins which give origin to venous internal hemorrhoids.

tures. The ingenious theory has been advanced that

the contraction of these slits, due to constipation, straining at stool, etc., by impeding the circulation is a potent cause of hemorrhoids. As the veins have no valves and because of the lake-like arrangement below this point, as previously noted, the theory is a very sensible one.

The Middle Hemorrhoidal is distributed to the outer surface of the rectum above the levator ani muscle. It receives the blood from the muscular coats of the bowel and does not anastomose very freely with the other veins.

The Inferior Hemorrhoidal is arranged around the sub-cutaneous tissue of the anus and is the venous plexus involved in external hemorrhoids.

NERVES.

These are from the spinal and sympathetic systems. The latter are from the inferior mesenteric and hypogastric plexus and are distributed to the muscular coat and mucous membrane including the internal sphincter.

The spinal nerves are from the *third and fourth sacral* and the *pudic*. The fibres enter the rectum between the internal and external sphincter muscles and are distributed very freely to the lower end of

the bowel and adjacent skin. Owing to this free distribution, operations here are the most painful of any in surgery. This is also especially noticeable in cases of fissure. The fact that these same nerves are distributed freely to the bladder, prostate, ureth-

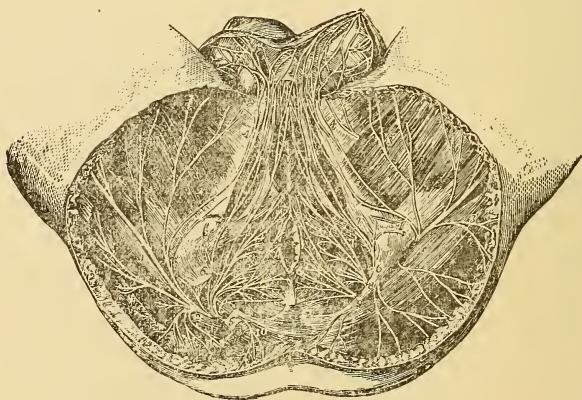


Fig. 8. Showing the nerve supply of the perineal and ischo-rectal region.

ra, etc., accounts for the pain felt in these organs in case of rectal disease as it does also for retention of urine in operations in this region.

THE PERINEUM AND ISCHIO-RECTAL REGION.

“This corresponds to the inferior aperture or outlet of the pelvis. Its deep boundaries are, in

front, the pubic arch and super pubic ligament, behind, the tip of the coccyx; and on each side, the ramus of the pubes and ischium, the tuberosities of the ischium, and the great sacro-sciatic ligament. The space included by these boundaries is somewhat lozenge-shaped, and is limited on the surface of the body by the scrotum in front, by the buttocks behind, and on each side by the inner side of the thighs. It measures, from before backward, about four inches, and about three in the broadest part of its transverse diameter, between the ischial tuberosities. A line drawn transversely between the anterior part of the tuberosity of the ischium, on each side, in front of the anus, sub-divides this space into two portions. The anterior portion contains the penis and urethra, and is called the perineum. The posterior portion contains the termination of the rectum, and is called the ischio-rectal region."

The ischio-rectal Fossa. This is the space between the tuberosity of the ischium and the rectum. It is a pyramidal shaped space with the apex directed upward and the base corresponding to the surface of the skin. It is composed of a quantity of fat and loose areolar tissue which is very distensible to allow the rectum to expand for the passage of fecal

matter. There are numerous connective tissue bands that divide the fossa into compartments which accounts for the fact that pus is not in one large abscess but in numerous small ones. The space is crossed by numerous blood vessels and nerves, but none of them are important. Owing to the fact that the connective tissue and fat are continuous from side to side behind the rectum, when an abscess occurs in one fossa it is very likely to burrow between the levator ani and the coccygeal attachments of the external sphincter until it gets into the fossa on the other side, forming, when the internal opening into the bowel and the two external openings have occurred, the so-called horse shoe fistula.

The Skin is thick and closely adherent to the underlying fascia. Over the external sphincter muscle, scattered bundles of involuntary muscular fibres are found which radiate from the interior of the anus. This is the *corrugator-cutis-ani muscle*. By its contraction it raises the skin into ridges radiating from the margin of the anus.

CHAPTER III.

CONSTIPATION

As a Symptom—Constipation due to Specific Causes—What is meant by constipation—Normal Bowel Movement—“Alimentary Constipation”—Lack of residue in the bowel not constipation—Intestinal Indigestion—The lack of Fluids in Food—Training the Bowels—Physiology of Defecation—Other causes of Constipation—Characteristics of the Stools—Diagnosis—Treatment—Boas’ Diet-List—Mechanical Treatment—Massage—Vibration—Electricity—Rectal Lavage—Exercise—Drugs.

This condition may be acute or chronic and is often spoken of as a symptom of some more serious trouble, but many authorities now believe that it may be and often is a distinct entity, due to well defined and specific causes.

By constipation is meant “infrequent or incomplete aline evacuations leading to the retention of feces.” This may mean that the bowels do not move with sufficient frequency or it may mean that there is not sufficient quantity at each movement.

There is no absolute rule as to the length of time that should elapse between evacuations, but in the healthy individual one bowel movement daily is generally considered normal. This, however, may vary greatly and still be within the limits of health. Cer-

tain persons may have two movements daily, others may go two or three days and seem to suffer no inconvenience. It is not unusual for some people to allow from one to two weeks to pass between evacuations, but this is, as a rule, to the serious impairment of their health.

The so-called "alimentary constipation," or that due to errors of digestion, is so closely allied to other conditions that it is difficult to say just which is the cause and which the effect.

It is not at all uncommon to find patients who complain of constipation who do not eat enough to give bulk to the intestinal contents and as a result peristalsis does no good as there is not enough for the bowel to grasp and it cannot be properly pushed on.

This is especially true among that class of patients who live on dainties and rich foods that produce but little residue and also among children who have passed the period of weaning, but who still remain on a milk diet. Here nature does not bring on a bowel movement as often as may be thought necessary, because there is but little that should pass away. This is not constipation at all.

On the other hand the reverse condition may exist. There are a great many people who are ex-

cessive eaters and who bolt their food, not only in large quantities, but improperly masticated.

Here the entire intestinal tract is overworked and an intestinal catarrh is established with the formation of intestinal gases and the abstraction of the liquid portion of the food without its being properly mixed with the intestinal juices and we have the clinical picture of intestinal indigestion with its accompanying constipation. Many also suffer from constipation because of a lack of fluids in the body. They do not drink enough water.

The composition of feces should be normally about 75 per cent water. When this falls to 50 per cent or less an action of the bowels is nearly impossible.

Of course, other things besides the drinking of an insufficient amount of water may produce dry stools, as excessive perspiration, diabetes, etc. Individuals vary so much in regard to the amount of fluids needed that it is difficult to advise them until they have been under observation awhile.

There is another condition which will bring about chronic constipation and which lies wholly under the control of the will and this is non-attention to the calls of nature.

Almost anyone may train their bowels to move at just such intervals as they see fit, and for this reason we find those low in the scale of intelligence more likely to suffer from this condition than those who, because of superior knowledge and training, know that regular evacuation of the bowels is of great importance and to neglect it means serious impairment of health.

The lower we go in intellectual capacity the more pronounced does this become. It is a well known fact that in our homes for feeble minded and asylums constipation is one of the most important things to be guarded against.

If not looked after it is not uncommon to have many cases of fecal impaction to care for. Nature is very quick to resent any violation of her laws and inflicts severe penalties on those who disregard them.

It might be well to consider briefly the physiology of defecation. Normally the lower end of the colon or that portion lying in the true pelvis is the true reservoir for fecal matter prior to its evacuation from the body. At regular intervals about once every twenty-four hours the mass passes down into the rectal cavity and the pressure made on the nerves of sensation conveys to the brain the fact that an evacuation of the bowels is ready to take place.

At this point the process is in most instances purely voluntary and under the control of the will and may be heeded or disregarded. In case it is disregarded the desire soon passes away and as a rule is not felt again for another twenty-four hours. Whether any or all of the material that was forced into the rectal pouch returns to the sigmoid is a disputed question, but in either case if this occurs often, considerable harm results.

In the first place the nerve centers soon become accustomed to the pressure constantly made upon them and do not respond as they should; gradually the desire is felt less and less until in some instances it is almost entirely lost.

Then again by remaining in the body long after it should have been cast off it becomes dry by having its moisture absorbed and soon a chronic proctitis and sigmoiditis result. This chronic catarrhal condition with its outflow of mucus soon gets the sphincters hypertrophied and in a spastic condition and they refuse to dilate except under the influence of powerful cathartics.

This I believe to be one of the great unrecognized causes of constipation. I might add in pass-

ing that this rectal catarrh is a most prolific cause of pruritus ani.

Constipation may also be produced by purely mechanical means and physical conditions or disease of other organs or parts only indirectly related to the digestive tract such as paralysis, pregnancy, pressure from tumors, or adhesive bands, binding the bowels down, stricture, hypertrophy of the rectal valves, hemorrhoids, the accumulation of fecal tumors, especially in the cecum, a retro-flexed and congested uterus tipped back into the hollow of the sacrum, and also from pain due to an irritable ulcer at the muco-cutaneous junction. The constipation following paralysis will of course depend on the parts affected and may be complete or partial.

If the lower limbs are seriously affected there is generally complete loss of power in the sphincter muscles and the peristaltic action of the bowels above causes the feces to flow away at irregular intervals without regard to any desire being felt. On the other hand there may be a paralysis of the bowel itself, which will stop all or nearly all peristaltic action.

It is often said that pregnancy causes constipation by the pressure which the gravid uterus produces on the large intestine. This is true to a lim-

ited extent only and occurs mainly in the early months while the uterus is low in the pelvis.

As soon as it gets big enough to produce much pressure it begins to rise into the abdominal cavity and tip forward, just the exact conditions that we would want to relieve pressure had it been present. The cause in my opinion is partly due to the large amount of fluids taken from the blood to nourish the child and also to the changed life of the mother, lack of exercise, worry and general disturbed condition of the nervous system.

Tumors in the pelvis may bring about the condition by partially occluding the bowel and adhesive bands following operations may do the same thing. Stricture, either malignant or benign, is often a cause, and is seldom recognized until it becomes so severe as to almost occlude the bowel.

Strictures of large calibre may exist for years, in fact, may be congenital and be the cause of most obstinate constipation without being discovered.

Hypertrophy of the rectal valves is often spoken of as a cause, but in my opinion this condition is very infrequent.

Pain will cause constipation by inducing the individual to postpone bowel movements as long as pos-

sible and thus bring about the same conditions spoken of under catarrhal proctitis.

Boas speaks of the atonic and spastic form of the disease. He says: "The atonic variety is the usual form of constipation that depends upon simple weakness of the intestine, such as usually develops under improper habits of living and eating." According to Fleiner, the stools are drier and firmer than usual, and consist of compressed and dessicated lumps or cylinders of large calibre, or of distinct particles or scybalæ bearing the impress of the sacculations of the colon." This is really the same condition spoken of under the head of the digestive or catarrhal form and is due primarily to errors of digestion.

He also says: "The spastic form is due, according to Fleiner, to the retention of firm masses of feces within segments of spastically contracted intestine, somewhat as in lead colic. It is found chiefly in women with pelvic disorders. The stools have the following characteristics: long or short cylinders of small calibre, often no thicker than a pencil or the little finger, or spherical masses the size of a hazel nut. The latter formation is not characteristic of spastic constipation, as it is also found in

the atonic form ; it is only when it is constantly present that it is significant." This spastic form is due to a tonic contraction of both the circular and longitudinal muscular fibres of the small intestine preventing peristalsis ; this also, in my opinion, is only another one of the many manifestations of gastric and intestinal catarrh, although it is probably more often due to some obscure nervous trouble and one of the conditions termed *illius* sometimes following abdominal operations.

The diagnosis of constipation is usually considered easy ; the fact that one is constipated is generally diagnosed by the individual before he consults the doctor, but the real cause is often most difficult to discover.

A thorough and most complete examination should be made, and this should include a careful rectal examination for hemorrhoids, stricture, tumors, fissure, etc. Also for tumors of the pelvis and abdomen, misplacement of the uterus, enlarged prostate and fecal tumors, the possible after results of any operation that may have been done in the past. If the patient is past middle life and the trouble has developed in a rather short period of time after having been regular, stricture from ma-

lignant disease should be suspected. If there is emaciation with frequent attacks of colic and a sallow cachectic looking skin the diagnosis is quite certain. It is only necessary to refer the reader to the causes already enumerated to suggest the character of the examination.

Treatment. This consists in using such methods and remedies as will induce the bowels to move at regular and somewhat frequent intervals. The way this may be accomplished depends largely on the cause. If the patient is suffering from the so-called atonic form, due to indigestion and the digestive canal has got into a chronic catarrhal condition his entire mode of life should be changed if possible.

Boas gives a diet-list which may serve somewhat as a guide and can be modified to suit individual patients.

This is as follows: 7 a. m., a glass of cold water; 8 a. m., a liberal breakfast, with sweetened coffee, a good deal of butter, honey and graham bread. After this the patient should go to stool.

One p. m., midday meal of meat, a good deal of vegetables, salad, stewed fruits, farinaceous food, with wine, water or tea.

Seven p. m., meat, with a good deal of butter,

graham bread, stewed fruit, beer, water or tea.

Ten p. m., stewed or fresh fruit (apple). To persons with whom it agrees, buttermilk may be given.

It is hardly necessary to remark that the above is useful only in uncomplicated cases of atonic constipation.

Mechanical treatment. In addition to the above I wish to recommend massage, or what is still better and more easily applied by the general practitioner, vibration.

The technique, as carried out by myself, is as follows: With a rather slow vibration and heavy stroke the vibrator is placed over the cecum and slowly moved along the course of the colon. After reaching the sigmoid it is lifted off the abdomen and the operation repeated. At first the abdominal muscles will contract and but little pressure should be made, but after a short time they will relax and the applicator should be pressed down with considerable force. In thin persons this will break up any fecal masses that may be present, draw the blood to the parts and tone up not only the abdominal wall, but the muscular coats of the bowel.

Great care should be taken to not use this method

in inflammatory conditions or where there is the least suspicion of an abscess. Considerable harm might result; however, after all inflammatory conditions have passed away this method may break adhesions and thus free the bowel so that it may more naturally perform its functions. It should of course not be used in any form of intestinal destruction. This treatment should be kept up daily for several weeks and then at less frequent intervals for as much longer.

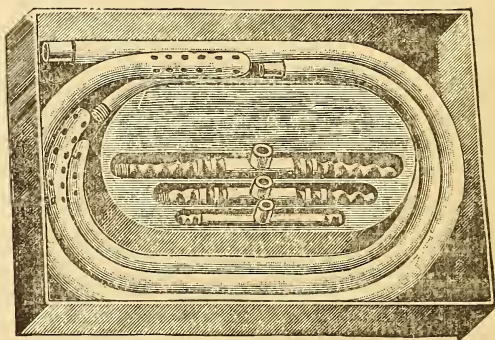


Fig. 10. Electric Rectal Irrigator.

Electricity is useful in many cases combined with the above.

Rectal lavage is the very best treatment that can

be used in paralytic conditions of the colon. This is done in the following way: An insulated rectal tube with many perforations at the end and provided with both an inflow and outflow connection for water (see Fig. 10). The inflow tube is attached to the water bag, being two or three feet above the patient. The outflow tube should be just long enough to allow the water to run into a vessel on the floor. One pole of the faradic current is now connected to the rectal tube and the other placed on the abdomen. The water is now turned on and the colon filled as full as the patient can conveniently bear it. when the outflow tube is opened and a weak electric current turned on. The abdominal electrode is now moved over the colon, following its course from the caecum to the sigmoid.

Care should be used that the water does not flow out any faster than it flows in or the colon will be empty before sufficient treatment is given. If there is not sufficient water to last long enough, shut off the outflow so what is in the colon may be retained. The sensation of the patient is the best guide as to the strength of the current. Where the trouble is more general than local I think the faradic

current applied along the spine with one pole on the abdomen is the best method.

In addition to the above the general health should be looked after and such drugs given as may be indicated.

From what has been said in regard to other causes, such as stricture, tumors, adhesions, painful or hypertrophied sphincter muscles, nothing more need be said as the diagnosis suggests the treatment.

There is probably no one thing so important as getting the bowels back into the habit of moving at a regular time daily; the patient should be taught that this is the most important event of the day, and should never under any conditions be neglected. He should be told to exercise in the open air as much as possible; simply a stroll around the block will do no good, but a brisk walk of a mile or two every day will be of great benefit; bicycle or horseback riding, boating, or anything that will bring all the muscles of the body into action, start the blood to flowing more freely through the sluggish veins and capillaries, and open the pores will often do wonders. Frequent baths with brisk rubbing is of benefit.

Drugs should be used only very sparingly, and not at all if it is possible to avoid it; those recom-

mended as being beneficial in this condition are very numerous, and no one need lack for variety. I believe that the mild alkaline mineral waters taken morning and evening do no harm, even if taken for a long time, or until they, with other means, bring about a normal condition of the bowels.

Many times a glass of cold water taken at bedtime, and a hot one containing a very small amount of sodium phosphate or magnesium sulphate an hour before breakfast, are of benefit. If a more decided effect is necessary, the following plan has proven very beneficial with me. Begin with the minimum daily amount of Fl. Ext. Cascara Sagrada required to get at least one bowel movement; give the amount required in three doses, one before each meal.

Suppose it requires ten drops three times a day to produce the desired result; this is given for a week, when one drop is omitted from each dose; the amount is decreased one drop each week until it gets down to nothing. If necessary this may be repeated, beginning the second time with about one-half the original dose, or in the case supposed, five drops. If other measures have been carefully attended to, the patient ought now to discontinue the medicine entirely.

There is a small pill on the market having the following formula that I have used with success in the way just spoken of, using the proper number of pills instead of the drops of cascara sagrada.

Ext. Aloes purificatgr. 1-12th
 Ext. Nucis Vom.gr. 1-24th
 Ext. Belladonnaegr. 1-100th
 Oleoresin Capsicigr. 1-500th
 Pulv. Ipecacgr. 1-120th
 Misce. Ft. pil. No. 1.

I think that the above pill is improved by adding to it a small amount of Cascara Sagrada.

In cases of pregnancy, where it seems to be necessary to give something for a long time, aiming to keep the patient in condition until after parturition, or in chronic diseases, where it is not thought best to try to effect a radical cure, the following formula is a most excellent one:

Cascaringr. 1-4th
 Aloingr. 1-4th
 Podophyllingr. 1-6th
 Ext. Belladonnaegr. 1-8th
 Strychnin Sulphatgr. 1-60th
 Gingerinegr. 1-6th
 Misce. Ft. pil. No. 1.

Sig. Give one or two at bedtime as required.

CHAPTER IV.

FECAL IMPACTION

Accumulation of Fecal Matter—Diarrhoea from Irritation—Causes—Symptoms—Diagnosis—Constipation—Treatment—Softening and Breaking up of the Masses—Removing it Mechanically—Cathartics Harmful—Injection of Water useless—Injection of Osgall, of crude Petroleum, of other Mixtures—Massage—Vibration—Mechanical Methods.

This means an accumulation of fecal matter in the intestinal canal, but more often in the cecum, sigmoid or rectum.

It is usually a mass that has gathered slowly, and during the time that it has been accumulating there is often a diarrhoea caused by the irritation which it produces.

It is caused by about the same things that produce constipation, but the beginning is sometimes a mass of seeds or other foreign bodies which act as a nucleus around which the mass gathers, much the same as a stone is formed in the bladder. In

fact, some of these, especially those of long standing, seem to be made up partly of lime salts. Large amounts of coarse, woody fibre or food with much waste matter, concretions formed by eating a great deal of magnesia, as is sometimes done for the relief of acidity. Foreign bodies lodged in the colon, stricture, etc., are some of the things that may bring it about.

As spoken of under constipation, non-attention to the calls of nature due to ignorance, paralysis of the bowels and intestinal atony may act as causes.

Symptoms and diagnosis. Constipation is likely to be the first symptom noticed by the patient and this is followed, usually by a chronic and most annoying diarrhoea with great straining at stool and the protrusion of congested angry looking masses of mucus membrane much resembling hemorrhoids and frequently mistaken for them.

Treatment. This consists in softening the mass so that it may be broken up and passed in the usual way, or removing it mechanically under anaesthesia. In my opinion it is useless to give cathartics and it may do harm. About the only remedy that has seemed to me to be of any benefit is some bland non-cathartic oil and glycerine. I have given a mixture

of one-fourth glycerine and three-fourths olive oil, apparently with good results.

Some treatment from below will be required in the vast majority of cases. It might as well be understood at the beginning that injections of water, no matter how given, or at what temperature, are useless.

Inspissated ox gall is said to act on the mass and cause it to disintegrate and pass away. This should be injected with the patient in the knee-chest position and if the impaction is in the cecum enough water should be added to force the ox gall to the proper place. An injection of a pint or more of crude petroleum oil with the patient in the knee-chest position will do wonders in many instances.

The so-called Noble's enema may be used in the same way. The composition is as follows :

Magnesium Sulph.	oz. 2
Glycerine	oz. 2
Turpentine	oz. $\frac{1}{2}$
Aqua, qs. ft.	oz. 16

This should be injected with the patient in the knee-chest position and retained as long as possible. In addition to any or all of the above meas-

ures, massage or vibration over the abdomen may be used, and often to great advantage.

If the above methods fail there is nothing to do but put the patient under an anaesthetic and break up the mass. If it is in the rectal pouch which is its usual location this is not hard to do. A scoop such as is used to remove gall stones does very well for this purpose.

The sphincter should be well dilated and even then it is at times no easy task to remove the mass. In female patients two fingers in the vagina will help to steady the parts and hold it firmly against the sacrum. In case the collection is too high to be reached from below perseverance along the line indicated will almost surely succeed in getting it to pass into the rectal pouch, when it can be removed as suggested.

CHAPTER V.

RECTAL ALIMENTATION

Early Beliefs—Nourishment by Absorption—When Rectal feeding becomes necessary—The necessity of great care and gentleness—Methods of Injection—Position—Care of Tubes—Where the Food should be deposited—The quantity of food—Intervals between feeding—Kind of foods for rectal feeding.

It has been known almost from the earliest history of medicine that certain kinds of food introduced into the rectum would sustain life for many days or even weeks, although none was put into the stomach. The early writers seemed to think the rectum had some digestive power much like that possessed by the stomach, but we now know that this is not true and that all the nourishment put into it is taken up by absorption into the rectal veins.

In certain diseases of the stomach, especially ulcer, it may be absolutely necessary that the organ be given complete rest and in order to do this rectal feeding becomes necessary. I do not wish to go

into this in detail as it would require too much space, but will give a few points that may be of benefit.

In the first place the greatest care and gentleness must be used to keep the rectum clean and free from irritation. As often given with metal or hard rubber nozzle and a fountain syringe the mucous membrane soon becomes sore and the whole rectum irritated and the patient becomes nervous to such an extent that it has to be discontinued.

METHOD OF INJECTION.

The best position for the patient is on the left side with the hips well elevated.

For an adult a large soft rubber catheter is the best tube to use. If the feeding is to be continued for some time the rectum should be washed out once a day with warm boracic acid solution, immediately after which a nutrient enema may be given.

The same tube may be used for both purposes, but for the cleansing douche a fountain syringe may be used, while for the nutrient enema a hard rubber piston syringe is to be preferred.

The most rigid rules should be observed in regard to the care of not only the tube, but the syringe and everything used that they may be kept in an aseptic condition.

When the patient is in position and the food warmed to a little higher temperature than the blood, the catheter should be dipped in warm olive oil and carefully pushed through the sphincters. No force should be used and the catheter should be allowed to go in nearly full length. The food is now sucked up into the syringe and after all air is expelled, is connected to the catheter and very slowly and quietly injected.

It is not absolutely necessary that the food be deposited above the rectal pouch and in fact the catheter often curls up and goes no higher than this point, but if it can be injected into the sigmoid without more effort than has already been given, it is best that this be done.

It is now believed by some physiologists that there is an upward current going on all the time along the walls of the colon, and that even under normal conditions while the main bulk of the material in the colon is flowing toward the rectum, there is constantly going on this return flow of the more liquid portions and that anything that may be of value from a nutritive point of view is picked up by the veins. If this be true, it is possible that any fluid injected into the rectum may be at once carried

upward in this current and absorbed from the bowel above and not from the rectal cavity.

The quantity used should not, as a rule, be more than four to eight ounces for an adult and if the rectum acts well this may be repeated in four or five hours, but if there is much irritation the time should be extended to eight hours and the enemas made somewhat larger and more nutritious.

SUBSTANCES TO BE USED.

Milk is the one food that may be depended upon. It should be pancreatinized and very rich in cream.

Eggs beaten up with milk and a little pepsin and salt added may be used.

Meat juice, scraped meat and various things along this line may be tried.

The following is a fair sample of mixtures that may be used.

Milkoz. 6

Eggs2

Sodii Chlor.oz. 1

M. Predigest with pancreatin gr. 5, Sodii Bi Carb gr. 15. Keep warm until slightly bitter and use.

CHAPTER VI.

HEMORRHOIDS

What Hemorrhoids are—Causes of Hemorrhoids—More frequent in men than women—Classification—External—Internal—Symptoms and Diagnosis — Capillary—Venous—Thrombotic—Cutaneous or connective tissues—Treatment—Palliative treatment — Diet — The general health—Drugs—Dilatation—Divulsion—Injection method of treatment—Methods of operating—Formulas for injection treatment—When the injection method should not be used—Other methods of cure—Operations—Electrolysis.

Hemorrhoids or so-called “piles” are tumors, situated at the muco-cutaneous junction of the anus or beneath the mucus membrane of the rectum and composed of a dilated blood vessel or a mass of dilated blood vessels united by connective tissue, or to a clot of blood outside the blood vessel caused by a ruptured vein.

This does not, strictly speaking, include the so-called tag of skin, but as they are usually the remains of the thrombotic variety or some irritation of the parts they would come under the above definition,

when they first become of sufficient importance to require the care of the physician.

Cause of Hemorrhoids. Nearly everything imaginable has been assigned as the cause of this disease, and yet it seems to occur regardless of any apparent reason. I have seen persons who were in perfect health otherwise, afflicted with the disease in its most aggravated form, while others who seemed to do everything possible to produce an attack escaped entirely.

Still there are some things that may safely be accepted as causes. In the first place we find that age has much to do with it as the disease seldom occurs in early life. Children are not often affected, although it is possible that this might occur. Cases are reported in children less than a year old. Many things that are known to produce the disease do not occur in childhood, such as menstruation, child-bearing and the excessive exercise of the genito-urinary functions.

It has been thought that heredity had some influence in causing the disease. While I am not able to deny that this is so it seems to me that it is true in a general way only. If a mother is in poor health during her period of gestation and suffers from

anemia, constipation and the hemorrhoidal troubles that so often accompany this condition, it is only reasonable to think that her offspring may be affected the same way to a certain extent, but because a child's father or mother had some rectal disease at some remote period of life is no reason why the child should be afflicted in the same way.

This is purely a local disease and there is no constitutional effect upon the system that may be handed down from father to son, as there is in syphilis and some other diseases. Where hemorrhoids appear in successive generations it is more likely that the children have lived in about the same way their parents did before them and the conditions that produced them in the parents have reproduced them in the children. I have on more than one occasion treated father and son and have known the disease to have been present in three generations.

It is generally believed that this disease is more frequent in men than women. Men lead a rougher life than women and are more subject to severe muscular effort and are more likely to over eat, and drink alcoholic liquors to excess, and yet on the other hand, women are subject to a monthly engorgement of the pelvic organs, and child-bearing is known to

be a most prolific cause of the disease. So, on the whole, it seems to me that the chances are about equally balanced. One reason more men seem to be afflicted than women is because the latter will not seek medical aid unless they are in a very serious condition, while men are more likely to go to the doctor upon the first appearance of the trouble.

There is no doubt that occupation and manner of living have much to do in the production of this disease. Persons who are constantly on their feet, especially if at the same time they are engaged in some hard labor, as railway firemen, engineers, etc., are very likely to be affected. When this is combined with irregular meals we have a most prolific cause of the disease.

On the other hand, persons who lead a sedentary life and are constantly at their desk are very prone to the disease because of the lack of exercise with its attendant indigestion and constipation. Those who habitually gorge themselves with large amounts of food and liquor are very likely to have hemorrhoids and it is not uncommon with some people to have an attack follow a banquet where much rich food and drink are taken.

Probably the most essential cause of the disease

is an anatomical one. This consists in the erect posture of the human being. Man is the only animal who stands erect. This posture throws the weight of the entire column of blood from the hemorrhoidal veins into their terminal portion in the rectum and a constant dilatation is the result. If the veins were supplied with valves, this would relieve this constant congestion to a certain extent, but there are no valves.

The veins pass from the peritoneal side of the bowel through button-hole like slits to the mucous side about a finger's length above the anus and then divide into smaller branches and drain the lower end of the bowel. This peculiar anatomical condition is no doubt the most prominent cause of hemorrhoids, as it may, under certain conditions, such as constipation, pregnancy or retro-version of the uterus, shut off the calibre of the veins and cause an engorgement and excessive dilatation of their lower ends. As the arteries are of different construction and do not pass through these openings they are not occluded in the way the veins are. As a result the blood flows into the parts easily, but has difficulty in getting out, and dilatation and hemorrhoids are the result.

Classification. In a general way hemorrhoids

are divided into *two general divisions*, viz.: *external* and *internal*, and these are each subdivided into two kinds as follows: *Internal—Venous and Capillary. External—Thrombotic and Cutaneous.* We often hear of various other kinds as blind, bleeding, itching, mixed, inflammatory, etc., but they are really all included in the above classification.

By internal we mean those above the sphincter muscles and which originate from the superior hemorrhoidal vein, and by external is understood those below the sphincter that are from the inferior hemorrhoidal veins. There is a mixed variety which is really a combination of the internal and external and need not be considered separately.

Symptoms and Diagnosis. Taking up each variety separately we will first consider the internal.

Capillary Hemorrhoids. These are simply a dilated condition of the terminal ends of the blood vessels and often if left untreated merge themselves into the venous form. While still small enough to be called capillary they do not project into the calibre of the bowel to any great extent and for this reason are difficult to locate. They are really more like a naevus or erectile tumor and often have the appearance of a ripe strawberry. The covering over the

dilated vessels is so thin that the passage of fecal matter over it causes it to rupture and a loss of blood is the result.

This constitutes practically the only evidence of the disease, as there is no pain, protrusion or any other symptom except the loss of blood. Often the patient is entirely ignorant of the fact that blood is being lost and great anemia results which does not yield to treatment by iron, arsenic, etc. I have had patients who were so weak from loss of blood that they could scarcely walk alone and who had been treated for months by internal remedies with no thought by themselves or by their doctor that the trouble all came from capillary hemorrhoids. Although but a small amount of blood is passed each day, nature cannot reproduce it as fast as it is lost.

Venous Hemorrhoids. In this form the capillary network of blood vessels has disappeared and protrusion is the chief symptom. It is true that the venous variety often bleed but it is from the pressure of the temporarily strangulated tumor which is protruded just far enough to allow the sphincter muscle to shut off the return flow and blood is forced through the walls of the veins. The patient is usually greatly relieved after this bleeding occurs.

As a rule this form of the disease does not need treatment until the tumors get large enough to protrude, but sometimes there is a train of symptoms that are characteristic of the disease before the patient realizes the nature of his complaint. Kelsey enumerates these symptoms as follows: "A feeling of discomfort in the rectum, and a sensation that it has not been thoroughly emptied after stool, which

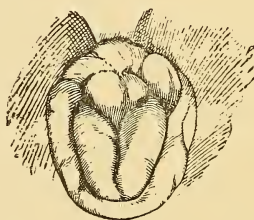


Fig. 11. Prolapsed internal hemorrhoids.

induces the patient to sit and strain for a long time; difficulty in micturation; diminished sexual power and desire; pain in the genitals, loins and thighs; and formication in the lower extremities."

In case the tumors are not large enough to protrude at stool it is often a difficult matter to discover them as they recede among the folds of mucous membrane and often they cannot be felt by the finger or seen through a speculum. Fortunately it

is seldom that treatment is required unless they protrude or bleed. There is really only one sure way to diagnose this kind of hemorrhoid and that is to have them forced out where they may be plainly seen. If necessary an enema of warm water should be given which will enable this to be done quite easily. There is scarcely any other condition for which this could be mistaken unless it might be prolapse. The latter comes down around the entire circumference of the bowel, making a complete ring, while hemorrhoids consist of one or more distinct tumors all more or less congested, solid and angry looking.

Thrombotic Hemorrhoids. This is caused by the rupture of a small vein and the extravasation of venous blood into the connective tissue. It often comes on without any apparent cause. The patient will feel an uncomfortable sensation at the verge of the anus and upon examining himself will find a small lump which he tries in vain to push above the sphincter muscle. If he finally succeeds, he finds that it will not remain there but at once comes out where he first found it.

In fact it will neither stay clear in or clear out, but persists in remaining where it is grasped by the muscle, which renders it very painful. In fact, pain

is the essential feature and there seems to be nothing that the patient can do or any position that he can assume that in any way alleviates the pain. If seen soon after it occurs, it will be found to be soft, of a bluish black color and very painful. If examined a few days later, it will not be quite so painful, and will feel like a shot or other hard substance

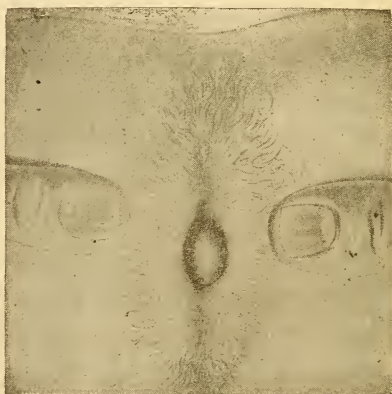


Fig. 12. A typical thrombotic hemorrhoid.

beneath the skin. If allowed to take its own course, it will be absorbed and carried away or suppurate and form a small marginal fistula.

Cutaneous or Connective Tissue Hemorrhoids. These are really fleshy skin tabs and consist of the

remains of thrombotic tumors that have been allowed to absorb, or from some irritation about the edge of the anus. The condition is often found after some more serious disease of the bowel higher up. In fact it used to be considered a prominent symptom of stricture or ulceration of the bowel. It is said by some that they are indicative of syphilis. They are not of much importance unless inflamed when they become quite painful.

TREATMENT.

The treatment of the *capillary* variety consists in obliterating the dilated blood vessels and producing an eschar instead. Probably nothing accomplishes this better than the application of fuming nitric acid. No cocaine is needed as a rule, although if the patient is nervous or very sensitive to pain, it may be used.

Dip a glass rod in the acid, and while the spot is exposed through a speculum, apply the acid, rubbing it in well but being careful to not allow it to drop upon or touch any other spot. After the acid has been applied, put on a solution of soda to neutralize any excess that may be present. This causes but little pain and requires no after treatment. They

may be destroyed by exposing the bleeding area and applying the red hot thermo-cautery.

The best treatment of the *thrombotic form* is to take a small, very sharp, curved knife and make a free incision, much the same as would be done if opening an abscess, and turn out the clot.

This is somewhat painful, and if it is desired to do a painless operation, dip a needle in pure carbolic acid and touch the healthy skin at the margin of the swelling. This will anaesthetize a spot through which the hypodermic needle may be pain-

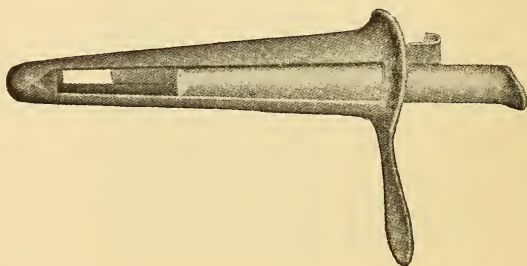


Fig. 13. Tuttle's rectal speculum. Very useful in treating capillary hemorrhoids.

lessly thrust just far enough to include all the beveled edge, when a drop of cocaine solution may be forced in; after waiting a minute for this to have its effect, it is pushed in a little farther and more solu-

tion injected. In this way the swelling may be filled with the solution and opened with absolutely no pain.

After the clot is turned out a pledget of cotton should be placed in the wound and left for twenty-four hours. It should be examined at this time to see that the cotton has not fallen out and a new clot taken its place. If this has occurred, it should be repacked, otherwise it should be syringed out with carbolized water, after which it will require no further treatment.

In case there is a redundancy of tissue, it is better to simply lift the tumor from its base with a pair of toothed forceps and make an elliptical incision around it, entirely removing not only the blood clot, but considerable of the surrounding tissue. If this is done, two or three fine silk sutures should be put in to draw the edges together. By putting them quite deep they may be inserted before the tumor is cut off and at once tied securely. Two or three days later they should be removed.

Either of these plans will give the very best results, both to patient and operator, and the disease will be permanently cured in the shortest possible time, which need not exceed three or four days. Should the patient refuse even this little operation,

there is nothing to do but apply lead and opium wash, together with hot or cold applications according to which gives the greater comfort to the patient, and wait for nature to absorb the clot, which in many cases requires two or three weeks. Or, should absorption not occur, wait for a marginal fistula to appear, and treat the latter some time in the future.

The treatment of the *cutaneous variety* consists in injecting the tumor with a solution of cocaine, lifting it from its base and cutting it off. Should hemorrhage be feared, a couple of ligatures may be placed under the tumor as directed in the thrombotic pile.

Unless there is an unusually large number of them, no fear of stricture need be entertained, except if they be inflamed, in which case the swelling is deceptive and more tissue may be removed than is intended, resulting in an excess of cicatricial tissue and contraction.

Should the patient seek relief during an attack of acute inflammation, it is better to use lead water and opium or other astringents until the attack has passed, and then operate. This operation is easy to perform, is entirely painless, and will give the utmost satisfaction to the patient.

THE PALLIATIVE TREATMENT OF HEMORRHOIDS.

Sometimes it is necessary to treat persons who have piles, by other than operative methods. This is true in pregnancy, where operations are not usually needed, as the disease will generally disappear soon after parturition; also in very old, feeble persons, or those who have some other chronic disease, it is often best to keep them as comfortable as possible without trying to effect a radical cure. Much may be done if the patient is willing to do his part and carry out fully the directions given.

The diet should be carefully regulated, and no food eaten that will leave a large amount of residue to fill the bowel and pass away as waste matter; the general health should be carefully attended to, and only food of the most nutritious and easily digested character given; this should contain such things as are known to prevent constipation, such as fresh fruits, rice, prunes, cereals, vegetables, brown bread, meat broths, oyster soup, etc. If necessary a glass of some alkaline mineral water should be taken night and morning, not to act as a cathartic, but to keep the bowel contents soft and non-irritating.

I know of no one thing that is of more benefit to these people than to have the bowels move the last thing before going to bed instead of in the morning. The recumbent position allows the blood to flow out of the hemorrhoidal veins easily and quickly, thus relieving the congestion, and by morning all irritation has disappeared, and the day is passed with but little discomfort. On the other hand, where the action occurs in the morning the blood has to be forced in a perpendicular column, which at best is a difficult performance, and the pelvic contents remain congested and the piles irritated all day.

After the bowels move, a small amount of cold water should be injected to be sure the rectal cavity is completely empty. Often most excellent results are obtained by following this with equal parts of water and witch-hazel and retaining it. This has an astringent effect upon the dilated veins, and sometimes seems almost to be a curative, although the patient should always be informed that he need not expect a radical cure.

Should there be a decided tendency to constipation, medicines of a decidedly laxative character should be given. The following formulas have given me good results:

Sulphur Lotioz. 1
 Potass Bitartoz. 1
 Pulv. Sennaedr. 4
 Fl. Ext. Casc. Sagrad.....dr. 2
 Misce. Sig. Take a teaspoonful at bedtime.

Also :

Aloingr. 1-4 th
 Strychningr. 1-60th
 Ext. Belladon.....gr. 1-10th
 Ext. Casc. Sagrad.....gr. 1
 Misce. ft. pil. I.

Sig. One or two at bedtime.

I believe it to be bad practice to be constantly introducing suppositories into the rectal cavity. They are said to "soften the fecal mass" and make it "mushy," but when it is remembered that the fecal mass is not in the sigmoid flexure except for a few minutes just previous to defecation, it is hard to see how it could be affected by drugs that do not extend more than a finger's length above the external sphincter.

It is true that in some especially old persons the rectal cavity is more or less filled with hard fecal matter all the time, but this is abnormal, and if washed out with cold water, as already advised, after

each bowel movement, it will be empty the greater part of the time. In some instances the fecal matter is dry and hard, being passed with difficulty and greatly irritating the anal canal. In such cases a half-ounce of sweet oil injected an hour before the bowels move will do great good, not so much from softening the hard lumps as from its lubricating properties, by which they are covered with oil and the mucous membrane is softened and their passage made easy. If it seems that a more decided astringent action is desirable, an ointment containing tannic acid may be used through a pile pipe two or three times daily.

After studying this disease for years, I believe that the palliative treatment outlined will keep patients who suffer from piles in better condition than any other with which I am familiar.

Dilatation. In old chronic cases of internal hemorrhoids it seems a waste of time to expect a cure from dilatation of the sphincter muscle as the tumors will not in any way be diminished in size and the muscle will be weakened and put in a much poorer condition to hold the mass up than it was before. The condition in which a cure may be expected is in recent cases where the tumors are just forming and

the irritated sphincter muscle grasps them so firmly that great pain is caused. Here a thorough dilatation or rather divulsion of the muscle will bring about a cure for some time and often permanently.

I am endeavoring to perfect a plan whereby this may be done in the office with cocaine anaesthesia and am able to do it in certain cases quite well, but in others it is not an entire success. This is by cataphoresis.

A pledget of gauze is soaked in a 10 per cent cocaine solution and wrapped about a specially devised copper rectal electrode. (See cut.) The gauze should extend over the enlargement so as to affect a portion of the skin outside the anus. This is now attached to the positive pole of a galvanic battery and a large moist pad attached to the negative pole and applied to the buttocks and about thirty milliamperes turned on and kept going for ten minutes. But very little of the cocaine will get into the general circulation but the tissues will be saturated with it better than if injected hypodermically.

Nitrous oxide gas works nicely in these cases, but the apparatus is expensive and not often needed and most physicians do not have it in their office. In case neither of the above can be used, chloroform

or ether are always at hand. As the muscle must be divulsed in case the ligature or clamp and cautery are used, it will be well to describe here how to do it.

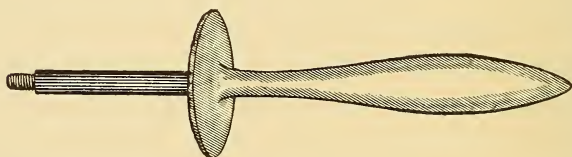


Fig. 14. Copper Electrode for producing anaesthesia of the sphincter muscles.

By divulsion is meant the stretching of the sphincter muscles until they are temporarily paralyzed so that any tumors or other abnormal conditions may be brought plainly into view.

It is not the intention to break the muscle and great care should be used in this regard. For this reason the various dilating instruments are never used by me with the exception of a broad bladed bi-valve speculum which is used to begin the operation, when my fingers or thumbs placed back to back are substituted. In this way I can feel the muscle yield and can direct the force intelligently and not have to depend upon a steel instrument.

The force applied should be directed in all directions and slowly, the thumbs being changed to dif-

ferent quadrants of the anal ring as dilatation takes place. If the muscle persists in contracting after the thumbs are removed the operation should be continued until it ceases to do so. Caution should be used in doing this operation on old persons or those whose muscles are weak as there is a possibility of its causing incontinence, although it has never done so in my practice.

THE INJECTION METHOD OF TREATING PILES.

This method is very much misunderstood by the profession, and many think that it should never be used, urging that it may cause sudden death, carbolic acid poisoning, emboli, abscess, fistula, great pain, etc.

I have never been able to learn of a death as a result of this treatment, and persons who make this claim have never, so far as I am concerned, been able to verify it other than by hearsay evidence. The other things such as abscess, etc., are no more apt to occur in the practice of qualified men than accidents are in the ordinary surgical procedures in the practice of the same men. It is well known that the great surgeon, Sir Astley Cooper, lost a patient from hemorrhage in a ligature operation for piles,

and several others have been lost by good operators.

I have seen complete stricture caused by the too free use of the cautery in hemorrhoid operations. I recently came near losing a patient from secondary hemorrhage following an operation for fistula. These accidents are not the fault of the method, but of the operator. I know that when this plan of treatment came out there were many accidents reported by Andrews, but this was by inexperienced men, and the same is true of any operation or new procedure. The first operations for the radical cure of hernia were nearly all failures; now they are nearly all successes. So it is not fair to compare this method as now done by reputable men with the results obtained ten or even five years ago. I do not wish to be understood as advocating this treatment in all cases, but that it has a field of usefulness, and in many cases is the very best procedure that can be adopted, is beyond question. I have used it in hundreds of cases, and in nearly every instance with the happiest results.

Several years ago, in a paper read before the Medical Society of the Missouri Valley, I made use of the following words, and further experience has given me no reason to change my opinion: "Patients

suffering from internal piles do not, as a rule, consult a physician until the tumors have been formed for some time. They may have existed for a long time before their presence is known by the patient; but after an unusual amount of exertion, or a protracted period of constipation, or too liberal indulgence in food or spirituous beverages, they suddenly

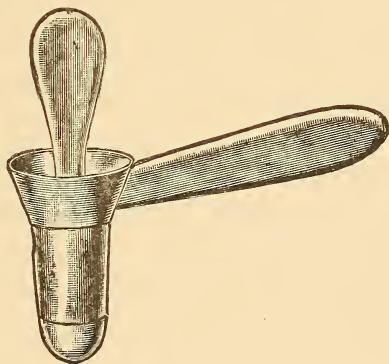


Fig. 15. Proctoscope, or Sphincterscope, to be used for diagnosing piles, and to expose them to view so they may be grasped with forceps and drawn down.

begin to protrude at stool. Now(when this occurs, they will nearly always be highly irritated and in a badly inflamed condition. Should the sufferer come to you at this time, he would not be a suitable subject for the injection plan of treatment. But most of these patients buy some patent medicine to use

until the acute exacerbation is over, and then go along pretty comfortably until another attack occurs, and each one proves a little more severe than the one that preceded it, until the tumors get so they protrude at stool.

“They generally remain more or less irritated, with the sphincter muscle highly sensitive. But occasionally, in a case of long standing, they will lose their soreness, and the constant friction and congestion will induce an induration of the tumor wall with a plastic exudation into the connective tissue between the coats of the bowel, and a somewhat hard semi-fibrous tumor is the result. The constant protrusion causes the sphincter to lose to a considerable degree its contractile power, and they protrude very easily. The sphincter also loses its sensitiveness and tendency to spasmodic contraction, which is so painful. In many cases the tumors are out of the body most of the time. These are the cases that are suitable for injection.

“In a recent work upon rectal surgery, by Drs. Goodsall and Miles, of St. Mark’s hospital, London, the following language is used: ‘In the third stage of hemorrhoidal formation, i. e., when the piles do not spontaneously return into the rectum, but re-

quire manual reduction, the prolapse taking place again upon slight exertion, such as standing or walking, as well as with every act of defecation, bleeding is the exception, a discharge of rectal mucus taking its place. When the surface of these piles is examined, the mucous membrane will be found to have undergone considerable structural change at its lower part, the epithelial covering being considerably thickened, so as to closely resemble epidermis. This altered mucous membrane is very much paler in color than normal and when dried, its surface does not readily become moist again. Moreover, gently rubbing the surface will not always cause bleeding, as would occur with a pile covered with normal mucus membrane. Microscopically the epithelium of the altered mucus membrane is seen to have become metamorphosed, the single layer of columnar cells having been changed into several layers of stratified epithelium.' "

This describes exactly the form of tumor to which I believe this method adapted. When used in this kind of case, and in a proper manner, there will be but little pain or other complication, and the cure will be as complete as though done with the ligature, provided, of course, all the tumors are

treated. As more fully illustrating my meaning, I wish to describe two typical cases that I treated several years ago.

Case I. Mr. H., a farmer, age about 50, had been a sufferer from internal hemorrhoids for several years. He had used about all the remedies that he had seen advertised, and nearly everything that his friends had recommended, with negative results. When he came to me, he easily forced into view several large, solid, painless tumors, such as I have just described. The sphincter muscle was greatly relaxed, and the tumors were out most of the time. I injected one of the large tumors and one of the small ones with a 50 per cent solution of carbolic acid, and returned them into the bowel. No pain was complained of, and I could hardly make the gentleman believe that I had done anything. In about three weeks I injected the remaining tumors with the same result. These tumors have never been seen or heard from since and nearly ten years have passed since the operation. There was no pain or inconvenience of any kind, neither was the patient hindered in the least from attending to his ordinary work about the farm. This was a typical case for the injection plan, and the most happy re-

sults were obtained, but such cases are not the class most often seen. In fact, such strikingly typical cases are rather rare. I wish now to describe one that is just the reverse of the above.

Case 2. Mr. W., also a farmer, age about 35, a neighbor of the foregoing, hearing how easily Mr. H. was cured, came to me, and upon examination, I found several highly sensitive tumors grasped by an irritated sphincter that was greatly given to spasmodic action. He would hear of no other treatment than that of injection, as had been done upon his friend. I explained to him that the cases were not the same, and that the operation in his case would be very painful; but it was that or nothing with him, and so, much against my judgment, I operated by the injection method.

I injected two medium size tumors the first time, and intended operating upon the others later. He still has the others, as I never had another opportunity to treat them. In a few hours after the operation he began to have pain, and it continued until it became terribly severe, and required large doses of morphine. His suffering was very great and lasted for a long time. This is an extreme case, and should not have been treated in this way, at

the time that it was. A week or two of preparatory treatment might have put the patient in proper condition for this method, but it would have been better to have operated upon him by the ligature.

METHOD OF OPERATING.

I do not think it best to disturb the patient's bowels by giving a cathartic unless he is constipated. If the preparatory treatment already described has been given, nothing further is needed, otherwise the diet may be limited for a day or two, and an enema of hot water used two or three hours before coming to the office.

Have the patient lie on the left side, and if he can do so, strain the tumors outside the sphincter muscle. In case he cannot do this, an enema of warm water should be given, which will bring them plainly into view. I usually put some cosmoline on the exposed tumors and mucous membrane to protect them from injury in case any of the acid accidentally runs over the outside.

Having now filled the syringe with a fifty per cent solution of carbolic acid with equal parts of glycerine and water, the needle is thrust with a quick but gentle motion into one end of the long

axis of the tumor and the point pushed to the opposite side, being very careful not to puncture the farther wall, as the medicine will run out of the opening made and do no good. Now, as the needle is being slowly withdrawn, the fluid is injected drop by drop. As this is being done a pale bluish color is seen to creep over the surface, and this is evidence that enough has been injected.

Should the tumor be quite large, the needle, before being withdrawn, may have to be again pushed in at an acute angle to the first puncture, and a little of the fluid forced into the tissue at each side not previously reached. The injection should be made very slowly in order to allow the medicine to diffuse itself as far as possible through the tissues, and a drop should be deposited just inside the puncture before the point of the needle is withdrawn in order to cauterize the opening and prevent the escape of the fluid. As the needle is quickly withdrawn, a pledget of cotton dipped in Monsel's solution is placed over the opening and held there for a short time to prevent the escape of the solution.

Not more than one large tumor or two small ones should be treated at one time. It is best to operate upon the small tumors first, as they are more

easily gotten at when held out by the large ones than they will be after the larger ones are removed. It is also easier for the patient, as the small tumors take up some room and the swelling is considerable in the large tumors, and the more space they have to expand the less pain will be experienced.

The tumors are now well oiled and replaced within the bowel. This can be better done by the patient than by the doctor, as he has learned by experience how to go about it. The bowels should not be allowed to move for two or three days, and if necessary, a pill of camphor and opium should be given at such intervals as will prevent the desire to go to the stool. This will not only bind up the bowels, but will relieve any pain that may be present. Should the bowels not move when it is desired that they should do so, a light laxative should be given; often a Seidlitz powder will be all that is necessary, or a small dose of castor oil, or broken doses of calomel.

When the desire for an evacuation is felt, instruct the patient to inject into the bowel an ounce of sweet oil, and the evacuation will be painless. I am not in favor of introducing suppositories of opium and belladonna into the bowel, as they only

act as a foreign body, and the only anodyne effect is from the absorption of the opium, which takes place to better advantage in the stomach.

After the first treatment, or where one or more large tumors are treated, the patient should refrain from active exercise and remain at least part of the

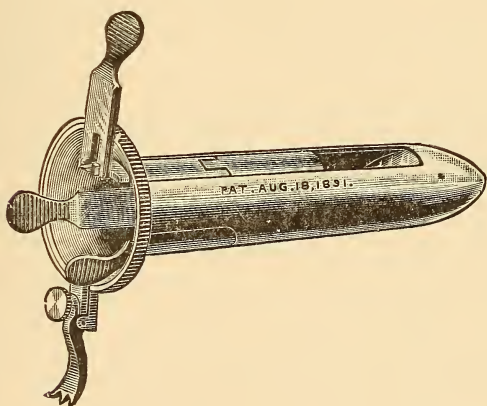


Fig. 16. Slide Speculum for injecting piles, treating ulcers, etc.

time in the recumbent position. Still, I have operated upon quite large tumors and had the patient go at once to hard labor; one worked the next day at digging a well, another at laying brick, and a third at sawing wood; this was done, however, contrary to my orders.

The second operation should not be done for about two weeks, or possibly sooner, if all soreness has disappeared. The patient may not now be able to force any of the tumors into view, in which case the work will have to be done through a slide speculum.

In this event an especially made needle about four inches long should be used. With these exceptions the injection will be made in the way already described, but great care must be exercised not to force the medicine *under* the tumor instead of *into it*. This accident is what causes abscesses, fistula, pain, etc., and should be carefully avoided.

The reason that this method is said to be only palliative and not curative is that the tumors are not all reached, and six months or a year later one or more that were left become enlarged and prolapse. This is often the fault of the patient, as after one or two tumors are removed, he will feel so much better that he will not return for further treatment. For this reason I always warn patients that there is a possibility that one small tumor might possibly come down later and have to be removed, but that it will not be a return of the disease, and is easily and quickly remedied.

FORMULAS FOR INJECTION METHOD.

The following formula is the one used more often than any other, and contains the essential ingredient of them all, viz., carbolic acid:

Carbolic acid	1 dr.
Glycerin	1 dr.
Aqua Dest.	2 dr.
Misce.	

Dr. Agnew of San Francisco recommends the following, and has been used in my practice with good results:

Sodii biborate	} aa.....	2 dr.
Plumbi acet.		
Glycerin		1 oz.

Let this stand twenty minutes in a warm-water bath. After twenty-four hours add one full ounce of crystalized carbolic acid and two drams of distilled water. The doctor also adds that "some make no allowance, in attempting to give my formula, for the increase in bulk of the glycerine occasioned by the addition of the half-ounce of solids, and direct that the ounce of carbolic acid be added to the full amount of the glyceride of lead and borax when made. By this inadvertence not much over thirty-five

per cent of carbolic acid is obtained. After trying the acid in varying strengths, and watching its effects, I have concluded that not less than fifty per cent solution should be used."

The following formula is one that was used for years by a traveling specialist. He sold the formula with directions for use for one hundred dollars. It

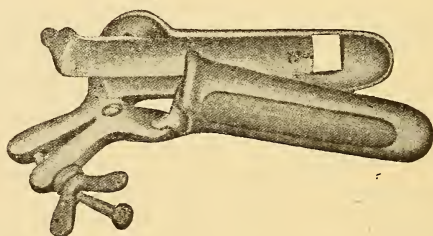


Fig. 17. O'Neill's rectal speculum for injecting piles, treating ulcers, etc.

was given to me by a man who paid fifty dollars for it:

Carbolic acid	4 dr.
Plumbum acetat	1 dr.
Salicylic acid	30 gr.
Cocain mur.	10 gr.
Aqua dest. }	aa, q. s. ft. 1 oz.
Glycerin }	

Misce. This should be used according to directions previously given.

NOTES ON THE INJECTION METHOD.

Never inject piles that are inflamed or irritated. If they cannot be put in a quiescent state, use the ligature or clamp cautery.

Never inject more than one large or two small tumors at once.

Always have the intestinal canal, and especially the colon, unloaded before operating, and then bind up the bowel for two or three days.

Never use a weaker solution of carbolic acid than twenty-five per cent. The object is to cauterize the tumor and absolutely destroy it, and this requires the stronger solution. A weak solution will often set up an inflammation that should never occur.

Do not operate the second time until the soreness has disappeared from the first operation.

If the directions given in the preceding pages are followed carefully, a cure may be expected in all suitable cases, which will constitute a majority of those that come for treatment, but the remainder would better be operated upon by the ligature or clamp and cautery.

In this, as all other minor operations, it is the attention to technique and minor details that counts for success or failure, and unless the physician is willing to take the trouble to give attention to these, he will not be successful, no matter what method he uses.

Use great care not to inject the fluid under the tumor instead of into it, otherwise complications may be expected.

Opiates are as a rule not needed, but should they be required, give camphor and opium pill, or morphine hypodermically, and make hot applications to the anal region; the pain, as a general thing, is of short duration, and does not in any way interfere with the cure any more than it does in other methods of operating.

The odor that is often noticeable as the destroyed tumors come away is not the odor of sloughing tissue, but is due to the admixture of intestinal gases with the broken down and disintegrating mass as it is being thrown off from the surface of the bowel.

OTHER METHODS OF CURE.

OPERATION WITH CONTINUOUS SUTURE CLAMP.

Another way of operating upon internal piles is the following, and it is adapted to any case that is sufficiently developed to allow the tumors to be prolapsed so that they may be grasped with a pair of forceps. This is also one of the very best methods of operating upon the mixed sort of piles where the

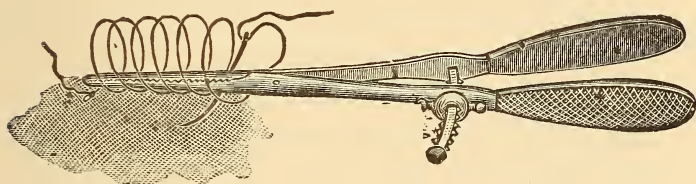


Fig. 18. Method of operating with Dr. Mason's continuous suture clamp.

whole mass, both internal and external, can be grasped in the jaws of the forceps.

First, saturate a piece of cotton in a ten per cent solution of cocaine, and by the aid of a small tubular speculum, insert it into the bowel, letting it extend from the rectal pouch to the external sphincter. Allow this to remain for about ten minutes, and it will partially remove the sensibility from the tumors so that they may be handled without pain. Now, either have the patient strain them out, or by means of a proctoscope, or with a slide speculum and forceps,

draw them to the outside, taking the large one first.

When the tumor has been exposed to view, seize its base, just tight enough so it will not slip, but not so tight as to cut off the circulation, with the author's continuous suture clamp. Now inject the tumor as full as it will hold of a four per cent solution of cocaine. After allowing this to remain for a minute or two, the clamp is closed as tightly as possible, and the tumor cut off close to the upper surface.

A medium size catgut is now threaded into a curved needle and passed through under the extreme upper end of the clamp, and a second stitch is taken so that it includes the first one in its grasp and serves to hold it from slipping, or a perforated shot may be clamped on the upper end which will answer the same purpose. The needle is then passed under and over the clamp at intervals of about a quarter of an inch until the lower end of the cut tissue is reached, being careful not to draw the ligatures tight.

The upper end of the ligature is now seized with a pair of artery forceps, the clamp removed, and tension made upon the lower end of the ligature, which will draw the stitches into place and securely close the wound. A knot is made in the lower end

or a shot clamped on, and the remainder of the ligature cut off. All the tumors may be operated upon at one time, or if preferred, they may be taken at intervals of a couple of weeks.

This is one of the most satisfactory operations that I know of, as it is perfectly safe, has no complications, is adapted to any form of pile, provided only that it can be reached, and can be performed by any physician without assistance, and with but little trouble. If but one tumor is to be operated upon, the patient need not go to bed, or even stop his ordinary work. There will be but little pain, and an opiate is seldom required. The bowels should not be confined, but allowed to move regularly, and the patient instructed to bathe the parts often with warm carbolized water.

OPERATING WITH NOTCHED CLAMP.

Another operation that has proven satisfactory is performed exactly as the one that has just been described, except that a clamp is used with a notched edge extending one-eighth of an inch above the jaws, through which ligatures are passed, and each tied tightly, after which the clamp is removed. (See Fig. 19.)

Either of these gives a clean, neat, surgical wound that is securely protected from hemorrhage, and which almost always heals by primary union. As

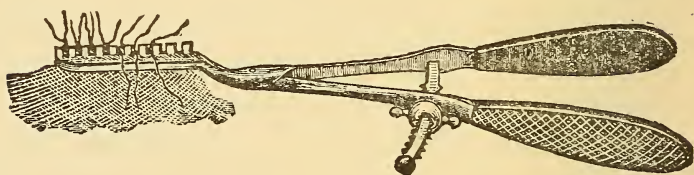


Fig. 19. Showing method of operating with the author's notched clamp.

the ligatures are catgut they need not be removed, but in operations where they can be easily reached, I prefer silk. Both of the above clamps may be had from the H. G. Penfold Co., Omaha.

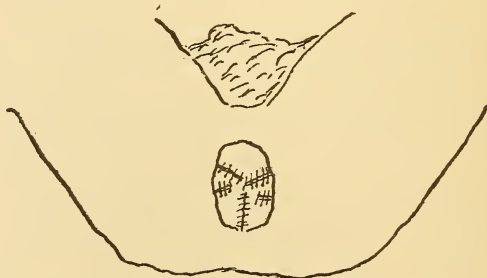


Fig. 20. Appearance of parts after continuous suture or notched clamp operation on hemorrhoids.

Operation by Ligature. This is the oldest meth-

od of treating internal hemorrhoids that is known to surgery and is one of the very best. Probably more specialists in this line use it than any other method. It causes somewhat more pain than some other methods, but no one can question its safety, efficiency, or the permanency of the cure if properly done.

My method is about the same as that described by Allingham. I think the bowels should be pretty well cleared before the operation and, to accomplish this, a good cathartic should be given the second night previous to the operation and followed by liberal doses of salts the following day.

The evening before the operation one or more large, hot enemas should be given to clear the colon of all fecal matter. A sufficient number should be given so that the water returns clear. At bed time the patient should have a hot bath and unless there is some contra indication, a pill of camphor and opium which will stop the peristaltic action of the bowels and give a good night's rest. But little water should be given just previous to the operation and the bladder should be emptied just before going to the operating room.

I am opposed to starving patients for a week be-

fore operating as is sometimes done, for, if they are at all weak, it is a severe shock and puts them in poor condition for the operation. If plenty of good nourishing food such as milk, eggs, beefsteak, etc., is given up to the time of the first cathartic and then reduced to about one-third of the previous amount, the patient will be in good condition.

The morning of the operation, no enema should be given or in fact anything done except to empty the bladder before the patient is brought into the operating room. In exceptional cases, if the patient is weak, I allow them a small cup of coffee or broth, provided it is taken not less than an hour before the operation.

The patient is now anaesthetized, placed on his back with the thighs well flexed on the abdomen and the legs well flexed on the thighs and held in place by leg holders. I like this position better than on the side, but when operating where a proper table is not to be had, the Sims position is satisfactory.

Having now dilated the sphincters, as previously described, the lowest tumor is grasped and with a pair of sharp scissors divided from below so that it is attached by the vessels and mucous membrane only. There is no danger in this as all the vessels

large enough to bleed seriously are in the upper part of the tumor. A stout ligature is now placed around the remaining portion and tied. Each tumor is in turn treated in the same way.

In case a tumor is very large a double ligature

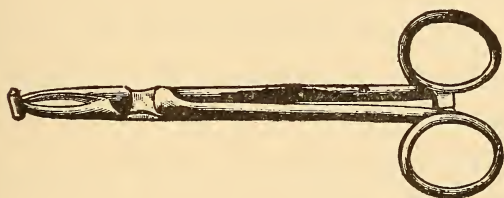


Fig. 21. T forceps, to be used for grasping hemorrhoidal tumors.

should be passed through its center by the aid of a needle after which the needle is cut off and each half of the ligature tied around the corresponding half of the tumor. For the large tumors, ligatures of plaited silk should be used and it should be strong enough so that it cannot be broken by pulling. Smaller sized tumors require smaller ligatures and care must be exercised that sufficient force is not used to make the thread cut the base of the tumor entirely off. After all have been tied, most of the tumor should be cut away, leaving only enough to be sure

the ligature will not slip off. A stream of water is now run over the field of operation to see that there are no bleeding points and a little sterile gauze packed about the stumps of the tumors as they recede above the sphincters. I like this better than a tube as it checks all oozing and does not cause any pain. A pad and T bandage should now be applied, the patient given one-fourth grain of morphine and put to bed.

On the following day the outside pad should be changed but the gauze put among the ligatures should not be removed, but allowed to come away with the first bowel movement.

A dose of castor oil should be given the third day and repeated as found necessary until the bowels move. No more should be given until the patient gets up. Many male patients are unable to empty their bladder after this operation. If the caution previously given, to not give them any water for a few hours previous to the operation and then not allow them to try to empty the bladder for from twelve to twenty hours, is observed, they will generally succeed, but if they try and fail, the catheter will have to be used and in some cases it will be necessary to use it in spite of all precautions.

I think it all right for the patient to get on his feet to empty the bladder the first time, as, often they can succeed in this way, where they could not while lying down. It is also just as well for him to use the commode for the first bowel movement and if an ounce or two of warm oil is injected into the bowel just previous to the movement, there will be but little if any pain. It is always best to inject a pint of warm boracic acid solution after the bowels move to wash out any remaining fecal matter and clotted blood. As a rule, my patients do not receive more than one or two doses of morphine but, if it is necessary, I do not hesitate to give enough to keep them comfortable.

The ligatures will come away in from five to eight days and about this time a little blood may be passed, but it should cause no alarm as it will soon cease. Occasionally a ligature may not be tied tight enough to destroy the stump and will not come away without assistance. Should this occur, it may be carefully exposed through a speculum and removed.

Clamp and Cautery Operation. As Kelsey is the most prominent advocate of this method, I will give his description of the operation in his own words.

The preparatory treatment is the same as already described.

“As a rule the patient is etherized, in order to permit a free dilation of the sphincters. The tumors are next seized and removed one by one. No

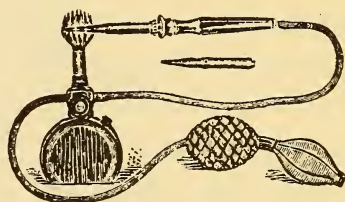


Fig. 22. Galvano cautery.

speculum is necessary for this, but if one be used the large Sims rectal speculum is the best. The tumor is seized with forceps and held out of the anus, while the base at the juncture of the skin and mucous membrane is divided as in the ligature operation, and the clamp applied to what remains of the pedicle in the sulcus thus made. The forceps are next detached, the tumor cut off with the scissors (but not so short but that a good, firm stump remains), and the cautery is then taken from the assistant, whose sole duty it should be to have it always ready, and applied thoroughly to the stump of the hemorr-

hoid. No haste should be used in this step of the operation. The pedicle should be thoroughly charred with the platinum at a red heat.

“When this has been done the clamp may be loosened, without being removed, to see if any ves-



Fig. 23. Sims' rectal speculum, as modified by Van Buren. If any speculum is needed this will be the most satisfactory in the cautery operation.

sel in its grasp is still inclined to bleed; and if a bleeding point appear, it is again tightened and the cautery is again applied. Thirty seconds is an abundance of time for each tumor. The secret of success in this operation is found just here. If all the cut surface is thoroughly cauterized while the clamp

is on, there can be no hemorrhage; but if more surface is cut than is cauterized, hemorrhage may reasonably be expected and the operator is to blame. Thoroughly cauterize the entire incision, except the initial one made before the clamp is applied, and trust nothing to the clamp or to nature, is the advice I always try to impress most strongly upon those studying this operation.

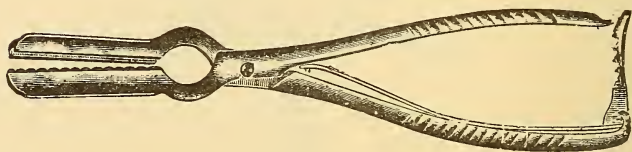


Fig. 24. Clamp for cauterity operation on hemorrhoids.

“When all the piles have been removed, the stumps will naturally retract within the sphincter and no dressing will be necessary.

“The thing most difficult for the unpracticed operator to understand is at just what point to apply the clamp; and this can best be learned by experience, as it really constitutes the delicate point in the operation. There is no difficulty when the tumor is an internal one arising fairly from the mucous membrane above the sphincter, and not involving the skin of the anus. In such a case the clamp

does not implicate the muco-cutaneous junction at the anus, and removing too little tissue will not leave unsightly and annoying tags of skin, nor will removing more than is necessary result in cicatricial contraction to a serious extent. But where the margin of the anus tends to roll over, considerable experience is necessary to learn just how much tissue to include in the clamp.

“When it is necessary to divide the skin of the anus with the scissors before applying the clamp, there will be a little bleeding, which is easily stopped by a compress and bandage; but when the clamp is applied only to parts covered by mucous membrane, and used without any preparatory cutting, the operation is almost bloodless, and under any circumstance it is unnecessary to soil more than a single towel. This is a great desideratum in cases of enfeebled patients, besides enabling the operator to have his wounds perfectly dry without the use of any lint or other dressing.

“No dressing of any sort is necessary after the clamp operation, except a pad of gauze covered with vaseline, and a T-bandage applied for a few minutes to arrest oozing from the preliminary incisions in the skin. If the patient seems to be doing well

and complains of no untoward symptoms, the parts need not be examined for ten days, and all that is required is cleanliness to the wound.

“The bowels should be confined for forty-eight hours, and about thirty-six hours after the operation—in other words, at night of the following day—they should be encouraged to act by a slight laxative, either a pill or a saline. A single dose will generally be sufficient, and when the time comes for the bowels to move, an enema of water should be thrown into the rectum to facilitate the passage. In this way an almost complete clearing out of the rectum is secured on the second day. The patient dreads this first motion, but is agreeably disappointed, often being surprised that he has much less pain

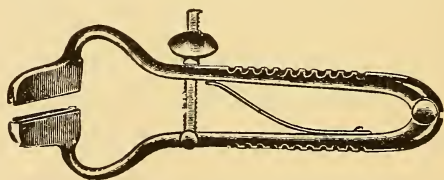


Fig. 25. Gant's clamp for cautery operation on hemorrhoids.

than his hemorrhoids caused him in each passage before they were removed.”

Electrolysis. Good results may be expected in un-

complicated cases by the use of electricity. The tumors are brought into view and two or three ordinary sewing needles mounted in a suitable holder and attached to the negative pole of the galvanic battery are thrust into each one separately after which the positive pole is placed on the buttocks and a current of ten or twelve milliamperes turned on.

After a few minutes the bubbles of hydrogen gas will be seen escaping around the needles. After this occurs to a well marked degree the current is turned off and the needles removed. As a rule about five to ten minutes is long enough to keep the current on. One application to each tumor is generally sufficient but if very large it may be required twice. The tumors do not slough but slowly shrivel up and disappear.

CHAPTER VII

ABSCESS

Seat of suppuration—Pus—Results—Fistula Abscess—
Etiology—Constitutional conditions—Varieties of abscess—Subcutaneous or marginal abscess—Ischio—
Rectal abscess—Submucous abscess—Pelvi—Rectal abscess—Symptoms and diagnosis—Treatment—Post operative treatment.

The perineal rectal and immediate surrounding tissues, are the seat of suppuration more often than any other region of the body. The anatomy of the parts is such that pus once formed burrows easily along the coarse muscular fibres and spreads over a large area because of the loose connective tissue so plentiful in this region.

Pus always goes along lines of least resistance and if this happens to be the mucous membrane of the bowel, as is usually the case, the abscess will open

into the bowel and later it will work its way to the outside and open spontaneously or be opened by the surgeon. In either case a complete fistula is the result which will require operation later.

Practically every fistula is the result of a previous abscess. Of course there are some few exceptions to this, as fistula might result from a surgical operation or a punctured wound, but these are accompanied by pus formation so that the rule would hold good.

Etiology. Any condition favoring the invasion of bacteria, such as a lowered state of health or a weakened vitality of the parts locally. A local lesion, such as ulceration, fissures, wounds, tears, or a disintegrating pile tumor, or new growth, may open the way for infection and the formation of pus. Traumatism either from within or without may be the source of infection or start a small point of inflammation that may develop into an abscess. I have removed spicula of bone and pieces of wooden tooth-picks that had passed through the intestinal canal and caused the inflammation and pus formation.

When the source of the disease originates in the rectum, the abscess almost invariably results in a complete fistula. Tubercle bacilli and other pyogenic

agents known to exist in the intestinal canal are the cause of suppuration in many instances. It has been proven beyond question that the tubercle bacilli may pass unharmed through the stomach and bowels until the rectal cavity is reached, where they may, by coming in contact with an abrasion of some kind, start an abscess. The gastric juice will arrest their action but the alkaline intestinal fluids will at once restore it.

Other pus producing organisms that are common to the colon may cause the disease; of these the most common are the *bacillus coli communis*, the *streptococcus pyogenes*, and the *staphylo-coccus pyogenes*. In addition to the above causes operating from within, there are many that produce their effect from without, as kicks, falls, blows, or traumatism of any kind, or from surgical operations; the improper use of strong caustics in treating hemorrhoids, or by infection through lesions around the external margin of the anus.

Tuttle thinks that a haematoma may form by the rupture of a small blood vessel caused by forcible divulsion of the sphincter muscle and infection take place, causing an abscess.

In addition to the local causes mentioned, the

constitutional condition of the patient has a good deal to do with the suppurative process. A person who is in perfect health has greater power of resistance than one whose tissues are weakened by disease. If the whole system is run down and the power of resistance is small, the ability to resist invasion by infectious germs is also small.

There is another condition that has seemed to me to invite abscess formation in this region and that is the plethoric individual, the man who works little and eats much and whose tissues are constantly overburdened with the products of digestion and tissue building elements. Any injury received by the person in this condition, although he may seem to be in good health, will cause the tissues to break down and suppurate.

Varieties. It is a difficult matter to classify the different varieties as regards location but the following seems to me to about meet all the requirements:

1. *Subcutaneous or marginal.*
2. *Ischio-rectal.*
3. *Submucous.*
4. *Pelvi-Rectal.*

In addition to the above we may have an abscess

in the prostate, urethra, or from disease of some organ or bone far from the region under discussion.

Subcutaneous or Marginal Abscess. These occur around the margin of the anus and are due to the suppurative of a thrombotic hemorrhoid or to the infection of some one of the many glands or follicles near the lower edge of the external sphincter muscle. An infected fissure may be the starting point, or any small tear or bruise which may allow infectious agents to enter the circulation. These abscesses are inclined to burrow away from the rectum rather than toward it and in many cases a fistula does not result; but as a rule fistula follows this form of the disease.

Ischio-Rectal Abscess. This is what is generally known as the perirectal abscess and occurs in the ischio-rectal space on one or both sides of the anus. This space is filled with loose connective tissue and is poorly supplied with blood vessels, thus favoring sepsis and the formation of pus. It is entirely hemmed in with fascia so that considerable resistance is offered to the further extension of pus. For this reason when pus is formed on one side it often passes behind the rectum between the attachment of the levator ani and the ano-coccygeal ligament and

gains access to the ischio-rectal space on the opposite side, thus forming what will later become a complex or horse shoe fistula.

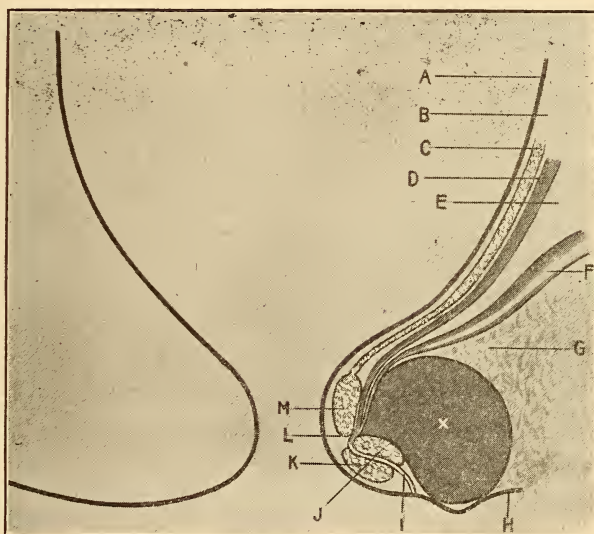


Fig. 26. Diagrammatic representation of an ischio-rectal abscess. A, mucous membrane; B, submucous tissue; C, circular muscular fibres; D, longitudinal muscular fibres; E, pelvi-rectal space; F, levator ani; G, ischio-rectal fossa; H, integument; I, tendinous insertion of longitudinal muscular fibres; J, deep portion of external sphincter; K, superficial portion of external sphincter; L, interval between internal and external sphincter; M, internal sphincter; X, the abscess cavity.—Goodall and Miles.

As the space immediately behind the rectum is the weak point or outlet for the flow of pus from the

fossa, so also, it is the weak point through which pus burrows into the cavity of the bowel, thus making the internal opening, while the two external openings, one in each ischio-rectal fossa, occur later, thus forming a typical horse shoe fistula. Occasionally pus may burrow anteriorly to the anus and form an anterior horse shoe fistula, but this is not common. In case it does do so it is more superficial than when it goes posteriorly and usually follows the raphe of the perineum and opens somewhere between the anus and scrotum or vagina or, in some cases, into the vagina.

Submucous Abscess. This variety is found in the submucous tissue between the muscular layer and the mucous membrane. It is usually one side only and has a tendency to burrow downward and open at the anal margin, or it may break in the bowel with the opening so high that it is found with difficulty. This is the form in which failure is often met with in fistula operations because of the fact that the abscess breaks both in the bowel and on the outside so far below its upper end or point of origin that when the tissues below the fistula openings are cut it leaves the main part of the abscess untouched and pus continues to form. This will be discussed further under fistula.

Pelvi-Rectal Abscess. This form of abscess originates above the levator ani muscle and below the reflection of the peritoneum. They may extend

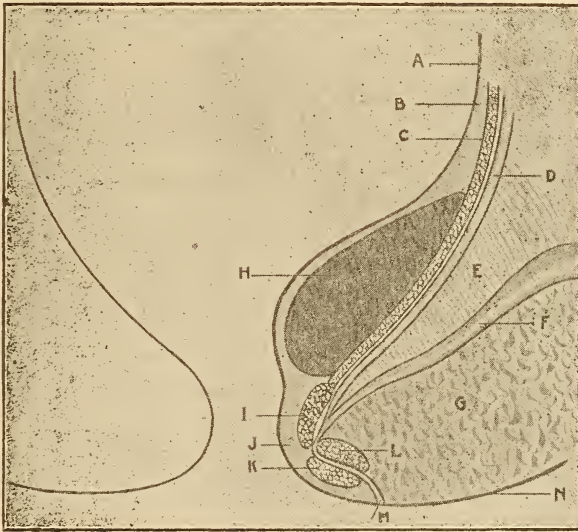


Fig. 27. Submucous Abscess. A, mucous membrane; B, submucous tissue; C, circular muscular fibres; D, longitudinal muscular fibres; E, pelvi-rectal space; F, levator ani; G, ischio-rectal fossa; H, abscess cavity; I, internal sphincter; J, interval between internal and external sphincter; K, external sphincter; L, deep portion of external sphincter; M, insertion of longitudinal muscular fibres; N, integument.—Goodsall and Miles.

above the peritoneum. They are caused by some affection of the bladder, urethra, prostate, uterus, or

broad ligament. In women they are called pelvic abscesses and may be opened through the vagina.

The connective tissue of the broad ligaments, meso-rectum, prostate and bladder are all continuous and if pus forms in almost any region of the pelvis, it naturally gravitates to the superior pelvi-rectal space. Injuries to the bowel wall on the inside above the sphincter muscle will cause this form of abscess. This may occur as the result of foreign bodies swallowed, as fish bones, etc., or it may be the result of ulceration or stricture.

This form of abscess is chronic and will often wall itself off from the peritoneal cavity and work its way downward, sometimes forming a connection with the ischio-rectal fossa and giving the appearance of being limited to that cavity or it may burrow around the bowel and open in two or more places, giving the appearance of being a horse shoe fistula when it finally opens on the outside.

Symptoms and Diagnosis. In the subcutaneous abscess the symptoms are much the same as those of a boil. There is in this the symptoms usually found where pus is forming, viz.: heat, redness, pain, and swelling. The pain in this variety is especially severe as it is just at the margin of the anus where it

is to a certain extent in the grasp of the sphincters. There is a feeling of fullness and throbbing which is intensified by walking or sitting.

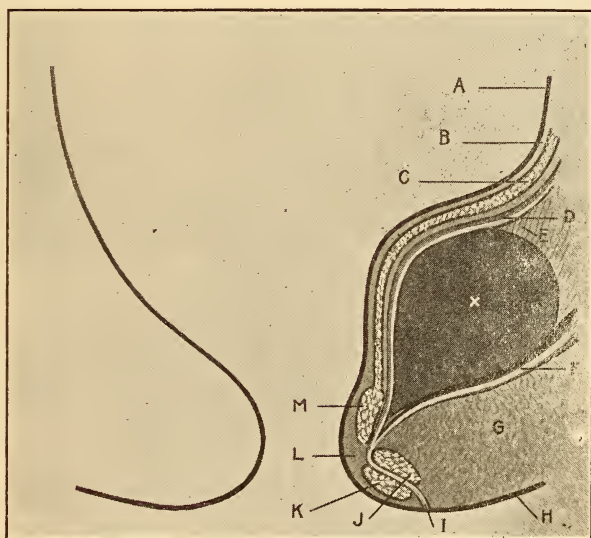


Fig. 28. Diagrammatic representation of a pelvi-rectal abscess. A, mucous membrane; B, submucous tissue; C, circular muscular fibres; D, longitudinal muscular fibres; E, pelvi-rectal space; F, levator ani; G, ischio-rectal fossa; H, integument; I, tendinous insertion of the longitudinal muscular fibres; J, deep portion of the external sphincter; K, superficial portion of external sphincter; L, interval between the internal and external sphincter; M, the internal sphincter; X, the abscess cavity.—Goodsall and Miles.

On spreading the nates apart and at the same time requesting the patient to strain down, the swell-

ing may be easily seen. It could scarcely be mistaken for anything else unless it might be a thrombotic pile; but as an abscess is usually bright red, while the former is dark blue or black, the mistake is not likely. Even should such a mistake be made it would not matter as in either case the treatment would be by incision and in one case pus would be evacuated, while in the other a clot of blood would be turned out.

In the ischio-rectal abscess there are much the same symptoms only they are intensified and there may be some constitutional symptoms, especially in the early stages. Should the abscess burst, especially if it be in the bowel, all the symptoms are relieved and the patient thinks he is over with it for good; but in this he is mistaken, for it will refill several times and the symptoms will all be repeated before it finally settles down to be a fistula.

As a rule there is no especial difficulty in making a diagnosis, as the symptoms of pain, heat, redness and swelling are too evident to be mistaken for any other condition. However, if seen early, before the pus has come near the surface, redness and swelling may be absent. The finger should always be introduced into the bowel as by this means much addi-

tional information may be obtained as to the extent of the suppuration and the likelihood of its immediate rupture into the bowel. Great caution should be exercised that the examining finger does not cause it to rupture, as this must if possible be avoided.

In the submucous variety the chief symptom is pain during and following a bowel movement. This might be mistaken for the pain of a fissure, but it is not of the same character and is higher in the bowel than the latter. The pain of a fissure is an ache while the pain of a submucous abscess is throbbing, sharp and lancinating. If rupture has taken place inside the bowel there will be a discharge of pus at stool and upon examination the finger will be found smeared with pus.

The diagnosis of the pelvi-rectal abscess is more difficult than any of the other forms. Here the diagnostic symptoms of pus formation are not present, or at least not prominent. Because of the abscess being so high in the pelvis there is no local heat, redness or swelling and while there may be pain of an acute character, it is not localized to the rectal region, but is ill defined and extends through the back and down the thighs and seems to be more

of a general pelvic cellulitis. There may be great constitutional disturbance with rigors, fever and disturbance of the functions of the bladder.

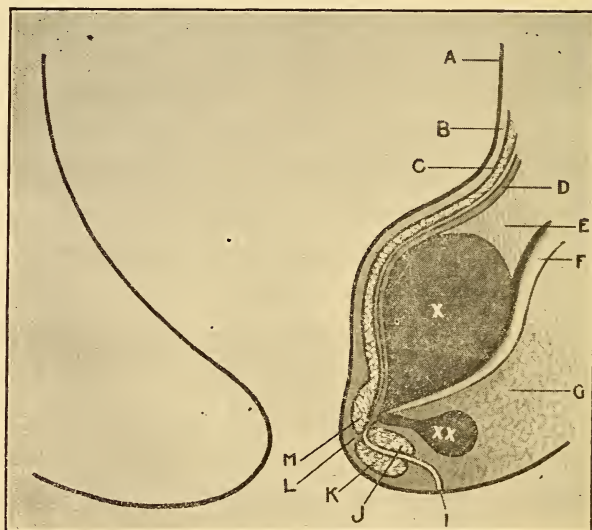


Fig. 29. A Pelvi-rectal abscess which has invaded the ischio-rectal fossa. A, mucous membrane; B, sub-mucous tissue; C, circular muscular fibres; D, longitudinal muscular fibres; E, pelvi-rectal space; F, levator ani; G, ischio-rectal fossa; H, integument; I, tendinous insertion of longitudinal muscular fibres; J, deep portion of external sphincter; K, superficial portion of external sphincter; L, interval between internal and external sphincter; M, internal sphincter; N, abscess cavity; XX, its extension into the ischio-rectal fossa.—Goodsall and Miles.

These abscesses are hard to diagnose and often mistaken for inflammations of the ovaries or broad

ligaments. The disease is more chronic than the other forms and may last for weeks or even months before its true nature is ascertained and at times rupture may take place into the peritoneum or possibly into the bladder or vagina.

Examination on the outside only reveals a tenderness on deep pressure, but the finger in the rectum can generally outline a thick indurated mass high in the bowel wall. In men the urinary symptoms are often so much more prominent than the rectal that the patient is treated by the passage of sounds and washing out the bladder and no attention is paid to the rectum. Examination of the blood to see whether or not there is an increase of white corpuscles is always indicated if a diagnosis cannot be arrived at in other ways. Speculums and proctoscopes should not be used as they are liable to rupture the abscess inside the bowel.

Treatment. An abscess in this region should be treated as it would in any other place, viz., by free incision and drainage. Most patients do not consult a physician until the abscess has ruptured or is about to do so and there is little opportunity to treat the case properly as might have been done earlier. If the pus has escaped before the patient has already

consulted a doctor he will probably not do so at all as the tension has been relieved and he feels so much better that it does not seem necessary.



Fig. 30. Showing T shaped opening in rectal abscess.—
(Goodsall and Miles.)

When seen early, if there is the least suspicion of pus, a free opening should be made and the necrosed tissue scraped out; in this way healing will take place

without the formation of a fistula. No possible harm can be done by the incision even if no pus is found and it may avoid serious suppuration. Should the patient absolutely refuse to allow this, he should be put to bed, a cathartic given and after it has acted, the bowels bound up with camphor and opium and the colon well cleansed with hot water, after which ice should be applied on the outside. In this way, the formation of pus may be avoided.

If it is seen that suppuration is taking place in spite of this treatment there is nothing to do but apply hot compresses and wait for nature to bring the pus to the surface. I would advise that the physician insist on an early operation, as in this way many fistulas will be avoided.

If the abscess is in the pelvi-rectal space the incision should be very free and the pus allowed to escape, after which it should be irrigated and packed firmly to avoid hemorrhage. If the wound has a tendency to close at the external opening, it should be incised at right angles to the first incision.

In the sub-mucous abscess, if it has not already broken inside the bowel, an opening should be made on the outside and the pus allowed to escape.

The after treatment consists in daily irrigation with weak bi-chloride, about 1-4000, and keeping

the parts open externally to get good drainage. The wound should not be packed very tight after the first dressing is applied.

CHAPTER VIII

FISTULA

Definition—Variety of Fistulas—Etiology—Location—Symptoms and Diagnosis—Incomplete external Fistula—Incomplete internal Fistula—Complete Fistula—Treatment—Palliative treatment—Elastic Ligature—Injection of caustics—Incision—Aseptic measures—After treatment—Complications.

A fistula is a pathological communication between some cavity of the body and the outside. The ancients thought there was a pipe or reed leading from the inside to the outside because of the fact that, in rectal fistula, there was an escape of gas. Some fistulae, while they may be complete, are so tortuous that it is impossible for even gas to work to the outside.

Fistulas are divided into *complete* and *incomplete*

and these are subdivided into *blind internal* or those having no opening on the outside, and *blind external* or those having no opening on the inside. The complete have both an internal and an external opening.

In addition to the above, we have the *complex* or so-called *horse shoe* fistula where there are two or more external openings, but this is only a form of the complete variety.

Etiology. Nearly all fistulas originate from an abscess and as these have been considered in a previous chapter, but little more will be said on the subject. The only exceptions are fistulas caused by punctured wounds.

The question is often asked why fistulas do not heal more readily in this region when the external opening is in condition to allow good drainage. Probably the most plausible reason is because of constant reinfection and the passage through the sinus of the different pus producing germs of the bowel. This does not seem to account for the non closure of the external incomplete variety.

I am convinced that but very few are actually without an internal opening into the bowel. Many times we cannot find this opening even though it actually exists. Aside from this, however, the opening

on the outside is generally close enough to the anus to allow reinfection from this source. These fistulous tracks are seldom straight and while they seem to be well drained in fact they are not and may be in direct communication with an old abscess cavity. In addition, the constant movement of the parts, both in walking and the evacuation of the bowels prevents healing.

Location. A fistula may occur in any part of the pelvis where the formation of an abscess is possible. The most common place for the internal opening is between the two sphincter muscles, but it may occur at any place around the anus or the perineum. It is not uncommon for more than one fistula to be present with no apparent connection.

As spoken of under the head of abscess, when pus burrows from an ischio-rectal fossa behind the rectum to the other fossa it usually breaks through the posterior surface of the bowel and later breaks on the outside between the tuberosities of the ischium and the anus and a horse shoe fistula is the result.

Symptoms and Diagnosis. The first thing that caused the patient to seek medical aid was the abscess that preceded the fistula, and this has been fully considered. After the fistula has become estab-

lished it will make itself manifest by the discharge of pus either on the surface or into the bowel according to where the opening is. Taking them in

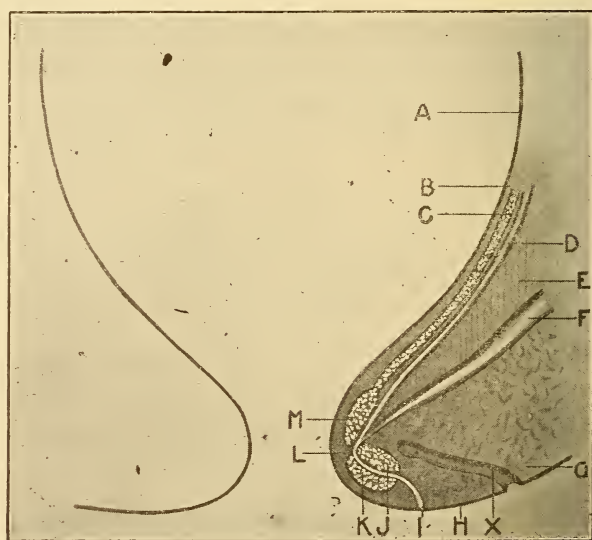


Fig. 31. Blind external fistula diagrammatically represented. A, mucous membrane; B, submucous tissue; C, circular muscular fibres; D, longitudinal muscular fibres; E, pelvi-rectal space; F, levator ani; G, ischio-rectal fossa; H, integument; I, tendinous insertion of the longitudinal muscular fibres; J, deep portion of external sphincter; K, superficial portion of the external sphincter; L, interval between internal and external sphincter; M, the internal sphincter; X, main track of fistula.—(Goodsall and Miles.)

separate order we will discuss the symptoms of each variety.

Incomplete External Fistula. This does not open

into the bowel, or at least no opening can be found. There is generally a discharge that seems to be mostly serum with but little pus in it. Often the discharge is so small that it is not necessary to wear a cloth to catch it and may even cease entirely and the external opening close, but it soon reopens. While it is closed there is a feeling of weight and pain which is relieved when it breaks.

The worst feature of this form of the disease is its effect on the skin as this, by being bathed in the serum and pus, soon becomes thickened and a pruritus may be established that will be hard to get rid of after the fistula is cured.

Incomplete internal Fistula. This is the most difficult form of the disease to diagnose. It is generally caused by a submucous abscess and the main thing complained of is pain at stool together with a discharge of pus. The patient will generally give a history of having had the symptoms usually accompanying the formation of pus as outlined under the heading of submucous abscess with a sudden discharge of pus and blood which relieved him greatly but the pus continues to discharge more or less at intervals although there is now but little pain. The

disease may entirely disappear at intervals, but is sure to recur.

The best way to make a diagnosis is with the

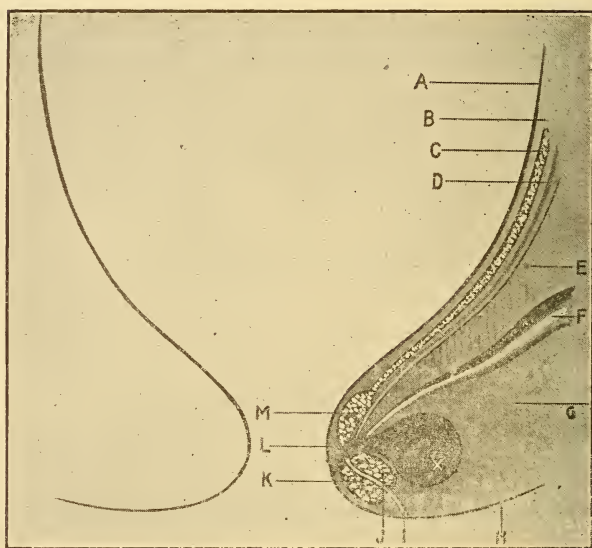


Fig. 32. Blind internal fistula diagrammatically represented. A, mucous membrane; B, submucous tissue; C, circular muscular fibres; D, longitudinal muscular fibres; E, pelvi-rectal space; F, levator ani; G, ischio-rectal fossa; H, integument; I, tendinous insertion of the longitudinal muscular fibres; J, deep portion of the external sphincter; K, superficial portion of external sphincter; L, interval between internal and external sphincters; M, internal sphincter; X, the abscess and fistula.—(Goodsall and Miles.)

fenestrated slide speculum. The internal opening can usually be felt with the finger, but not in all

cases. If this can be first located the speculum should be introduced and the slide withdrawn after having been placed over the supposed opening. By making pressure about the parts with the finger pus may be seen bubbling up into the bowel. By the use of a bent probe the extent of the track may be ascertained. Treatment should be carried out at the time the diagnosis is made as it can be done painlessly. This will be described later.

Complete Fistula. There is but little difficulty as a rule in making a diagnosis of a Complete Fistula. The patient will often arrive at a diagnosis before he consults a physician. There will be a history of a previous abscess which has broken and discharged pus and may have refilled and broken several times until the discharge became constant. There is an escape of gas and fecal matter through the external opening and this with the pus and broken down tissue makes it very hard to keep the parts clean and a disagreeable odor is always present which is very unpleasant to other people.

The discharge is usually greater than in either of the other varieties; its amount will show the quantity of tissue involved and the extent of burrowing that has taken place, as a short straight track will not

discharge as much as a long one with many off-shoots or branches. The diagnosis is easily made as a rule, by introducing a probe into the external open-

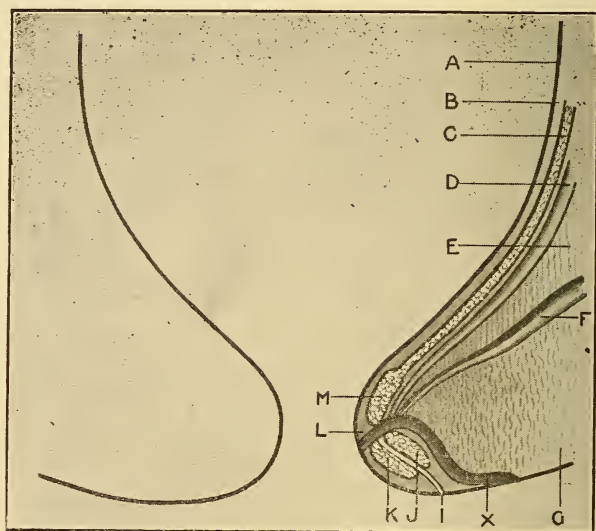


Fig. 33. A complete fistula diagrammatically represented. A, mucous membrane; B, submucous tissue; C, circular muscular fibres; D, longitudinal muscular fibres; E, pelvi-rectal space; F, levator ani; G, ischio-rectal fossa; H, integument; I, tendinous insertion of longitudinal muscular fibres; J, deep portion of external sphincter; K, superficial portion of the external sphincter; L, interval between the internal and external sphincter; X, main track of fistula.—(Goodsall and Miles.)

ing and feeling in the rectum with the finger for the other end. Sometimes the probe cannot be made

to pass through the internal opening although one is known to be present. This is because the opening through the mucous membrane is higher than that through the other tissues owing to the fact that the original abscess broke through the mucous membrane at its highest point and later burrowed toward the sphincter and finally opened in the ischio-rectal fossa.

If the track is very tortuous, as is often the case, it may be impossible to pass a probe through it. This is not important, however, as the diagnosis may be made in other ways. By palpation the course of the sinus may often be outlined running under the mucous membrane or skin. The injection of some colored fluid as milk or methylene blue will often reveal the internal opening. Some authors lay great stress on finding this opening, but I think its importance over-estimated, as, if the treatment is by the knife an opening can be forced through and if the mucous membrane is examined and divided as high as it is undermined the result will be perfect.

Treatment. The incomplete external is best treated by thoroughly dilating the external opening by freely incising it and scraping out all broken down tissue and then cauterizing it with pure carbolic acid

or silver nitrate. In fact it is really converted into an open wound and allowed to heal by granulation.

Some authors claim that there are no fistulas with an external opening but what has an internal one and that in case it cannot be found one should be



Fig. 34. **Fistula.** a. Complete. b. External incomplete. c. Internal incomplete.

made. I think, however, that there are many incomplete external tracks that do not go near the mucous membrane of the bowel and to force an opening through all the intervening tissue would be foolish.

Internal Incomplete. In case the internal opening is large enough to be felt with the finger, it should have a hooked probe inserted into it and drawn down until the point is seen to bulge the skin external to the sphincter muscle. At this place a free

crucial incision is made, converting it into a complete fistula.

It should now be well cleaned from pus and blood and injected with the silver solution, as already directed, being careful to keep the external opening dilated for drainage. This will almost invariably cure these cases, and will not necessitate cutting the sphincter muscle. In case the internal opening cannot be felt, and there is simply a burrowing of pus under the membrane, it is not necessary to make an opening through the skin; pick up the undermined tissue with a hooked probe, and incise it freely to the bottom of the sinus.

In some cases the formation of the abscess begins above the place where the opening is located, having burrowed some distance before it breaks through. Should this occur, introduce a grooved director into the sinus and push it to the top of the undermined tissue. It is then forced through so that a bridge is left over the director that should be divided. It is well to be on one's guard in cutting the membrane high in the bowel, as a branch of the superior hemorrhoidal artery might be severed, or even the main artery if the incision is carried too high.

It should not be forgotten that this artery de-

scends along the posterior aspect of the rectum until within four inches of the external sphincter, or a full finger's length, and then divides into two branches that pass around the sides of the bowel, where they separate into many small ones. It is almost never necessary to go high enough to cut the main artery. Should it be feared, however, that this vessel or a branch might be included in the cut, make the incision between two tightly tied ligatures, or better still, with the thermo-cautery.

Complete Fistula. The treatment of complete fistula may be by one of the following methods:

1. *Incision.*
2. *Injection of caustics.*
3. *Elastic ligature.*
4. *Palliative.*

Taking them in the reverse order given above I will discuss each separately.

Palliative Treatment. At first thought there seems to be but little that can be done in the way of treatment except to cure the fistula, and further it might be said that there is no fistula but what ought to be cured. There are some patients far advanced with pulmonary or other chronic disease upon whom

operation is not indicated and they should be made as comfortable as possible.

The warm sitz bath both morning and evening, pressing the track of the fistula, while in the bath, to remove as much pus as possible. A cloth wrung out of hot boracic acid water may be applied for an hour or two at a time after the bath and sterile gauze worn during the day. The bowels should move just before one of the baths is taken and a pint or more of boracic acid solution injected to wash out any remaining fecal matter and cleanse the internal opening.

The bowels should not be allowed to get too loose, as fluid fecal matter will find its way into the fistulous track and aggravate the trouble. If the bowel contents are inclined to be hard and dry an ounce of oil injected previous to a movement will act favorably and be better than cathartics.

Elastic Ligature. This treatment seems to me the poorest that could be adopted, but as it has been used for many years and still finds its way into text books, I will describe it briefly.

The only thing in its favor is that it requires no cutting and the patient as a rule can go about his regular work to a certain extent. If there is

any burrowing except the one straight track the method is likely to be a failure as these will not be included in the grasp of the ligature and pus pockets will form that will eventually work their way to the surface and cause new tracks.

A small, round, soft rubber ligature is passed through the track by being threaded through the eye of a probe that has previously been passed and then drawn back carrying the ligature with it. As it is difficult to tie an elastic ligature, both ends are threaded through a perforated shot which is clamped upon them after they have been put upon the stretch.

After the tissues have cut through so the ligature is loose it should again be drawn tight and another shot with a slit cut in it clamped on and the first one cut off. This is repeated until the ligature has cut its way out. This method in the majority of cases is exceedingly painful and many patients are confined to bed for a week or more. The whole area involved is a pus cavity that cannot be kept clean and many times it proves a failure.

Injection of Caustics. Prepare the patient by the use of cathartic medicines, enemata, and restricted diet so that the colon will be as nearly empty as

possible. Syringe the fistulous track with a solution of peroxide of hydrogen and follow with plain wa-

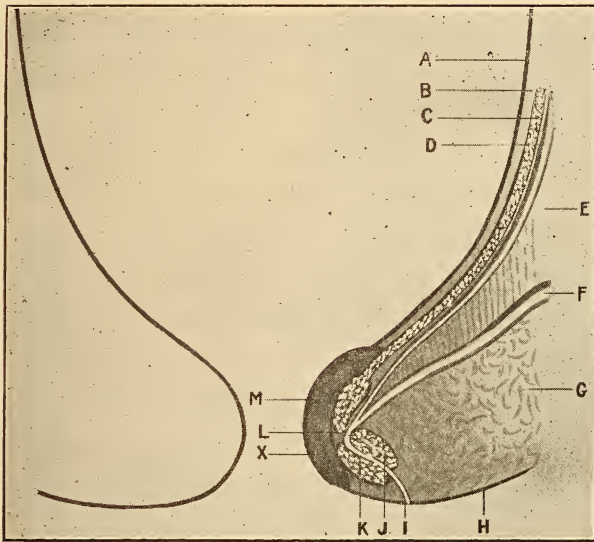


Fig. 35. **Diagrammatic representation of a submucous blind internal fistula resulting from a fissure.** A, mucous membrane; B, submucous tissue; C, circular muscular fibres; D, longitudinal muscular fibres; E, pelvi-rectal space; F, levator ani; G, ischio-rectal fossa; H, integument; I, tendinous insertion of longitudinal muscular fibres; J, deep portion of external sphincter; K, superficial portion of external sphincter; L, interval between internal and external sphincter; M, internal sphincter; X, main track of fistula.—(Goodsall and Miles.)

ter. After this is done anaesthetize the track with a 10 per cent solution of cocaine. Now fill a good-

sized rubber or glass syringe with a *saturated solution* of silver nitrate. Put a rubber finger cot on the index finger and place it firmly over the internal opening of the fistula if it can be found. It can usually be easily located by careful search with the finger in the bowel. Put cosmoline on the skin to prevent it from being burned by the fluid that runs out. Introduce the syringe point firmly into the external opening, completely closing it, and with the finger covering the internal opening, force the intervening cavity full of the silver solution, holding it there for a short time. This will not only fill to its fullest extent, the main track, but also any branches that may be present. Remove the syringe, and with the finger, massage the fistula thoroughly to bring the medicine into contact with all parts.

In case the internal opening cannot be located, force the solution in just the same, as, should it enter the bowel, no harm will be done. In some cases, especially if the internal opening cannot be found, it is better to use a hard rubber uterine syringe with a long nozzle with one or two openings that force the solution out at an angle of about forty-five degrees instead of from the point; this will obviate, to a large extent, its being forced into the

bowel. This is much better than the small silver canula that is so often used, as the latter is apt to be forced into healthy tissue, where no track exists, while with the former this could hardly occur.

As a matter of precaution, an ounce of sweet oil should be forced into the bowel to prevent any possible damage to the mucous membrane that might result from the silver solution. Nothing should be put into the fistula after the silver solution has been injected. Unless the external opening is quite large, a crucial incision should be made to secure good drainage.

The entire lining of the fistula will slough away in five or six days, and healthy granulations spring up to take its place. The external opening must be kept well dilated to allow drainage, and a moist corrosive sublimate dressing applied for the first few days. If after two or three weeks the fistula is still present, the operation should be repeated. Often the first treatment will nearly close the sinus, and the second one is needed to complete the cure.

Incision. By this is meant cutting the intervening tissue between the sinus and the skin and searching out and dividing any branches that may exist. There are several different procedures that may be

included under the name of incision, such as dissecting out the sinus intact and closing the wound with the hope of getting primary union, closing the internal opening and cutting all tracks outside without cutting the sphincters, etc., but I will not describe these as the physician who does but little of this work would scarcely make use of them.

Preparation of the Patient. As careful aseptic measures should be carried out in these cases as though they were not already infected. It is of course impossible to get the parts in an aseptic condition, but this is no reason why it should not be as near in this condition as can be. If the caustic treatment has been used and proven a failure it has only put the parts in better condition and done no harm.

About the same preliminary treatment should be carried out as described in the ligature operation for hemorrhoids. In addition to this the parts should be shaved and scrubbed with green soap and a moist bi-chloride dressing applied and left on over night. I think it well to give the intestinal antiseptics and believe that beta-naphthol comes nearer rendering the colon sterile than anything else.

If there is not too much cutting to be done the

operation may be carried on under cocaine anaesthesia, but if the tracks are deep and the openings numerous, chloroform or ether should be used. Having placed the patient on the table in the lithotomy position, if general anaesthesia is made use of the sphincters are thoroughly divulsed. If cocaine is used they are stretched as much as the patient can bear easily.

A grooved director is now introduced into the external opening and allowed to find its way through the sinus into the bowel. If this is accomplished the finger is hooked over the upper end and it is pulled to the outside and a sharp bistoury run along the groove, cutting all the tissue upon it. If the muscle is included in the tissue cut, it should be divided square across and not diagonally. Search should now be made for any off-shoots from the main track and if any are found they should be divided.

In old cases where there is much hard cartilaginous tissue, the so-called back cut should be made, that is, to draw the sharp edge of the knife through the back wall of every sinus found. It is well now to trim all over-lapping edges as they may interfere with the healing process. In case the director cannot be carried directly through the track because

if it is too tortuous it should be carried in as far as it will go easily and the remainder of the way may be found by dissection without difficulty. This is really the best way in any case as the tissues are not distorted by being forced out of their natural position. After all tracks have been divided, all overlapping edges trimmed and all hemorrhage of importance stopped, the wounds are tightly packed with sterile



Fig. 36. Grooved director for operating on fistula.

gauze, a large pad put on and held by a T bandage and the patient placed in bed.

Horse Shoe Fistula. As already stated this form of the disease is due to pus burrowing from one ischio-rectal fossa behind the rectum to the fossa on the opposite side. The internal opening is nearly always in the posterior wall of the bowel. The incision should be made V-shaped, cutting from the external opening on each side to the posterior commissure behind and then cutting from there to the internal opening. This only necessitates cutting the sphincter muscle in one place. It matters not how many openings there may be on the outside, they

can nearly always be traced to one opening through the bowel wall.

After Treatment. A hypodermic of morphine should be given as soon as the patient is put in bed, the amount being regulated by the extent of the cut-

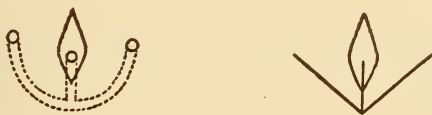


Fig. 37. Horseshoe fistula. Lines of incision in operating. A pill of camphor and opium had best be given about twice daily for two days and the third night a couple of C. C. pills to be followed in the morning by liberal doses of salts.

Twenty-four hours after the operation the external dressings should be removed and fresh ones applied, but the packing should be left for at least forty-eight hours. When it is thought best, remove it by running over it hot bi-chloride solution 1-4000 by which means it may be drawn out quite easily. The new dressing should be applied loosely and not packed in as the first was; its only object being to keep the external edges apart so healing will take place from the bottom. The wound should be irrigated once daily with sterile water, bi-chloride, or

carbolic solutions. If the granulations become sluggish they should be brushed with a 20 per cent solution of silver nitrate or the wound packed with gauze wet with equal parts of balsam of peru and castor oil.



Fig. 38. Complete fistula, showing how pus may burrow beneath the mucous membrane both below and above the opening into the bowel.

Complications. Hemorrhage must be guarded against; any vessels that spurt should be grasped with artery forceps and tied. The packing should be put in very tightly and a good deal of pressure made on the pad with the bandage. After the reaction from the chloroform has taken place small vessels often relax and bleed freely. The dressings should be examined occasionally for several hours

to see that bleeding is not going on. If it is, the dressings should be removed and the bleeding point searched for and tied. If too high in the bowel to tie it may be grasped with forceps which can be left on for a few hours and the dressing reapplied around them.

Another complication is an action of the bowels too soon after the operation. This is due to the fact that proper preparation was not carried out before the operation. If it occurs, the bowel should be at once irrigated with hot boracic acid solution and clean gauze packed in the wound if the first has come away or is soiled.

Retention of urine often occurs and is due to the reflex action on the genito-urinary system. The same precaution should be taken as directed for hemorrhoids. In some cases the discharge will persist after it has apparently had time to heal. This is because some sinus has been overlooked and not divided.

Incontinence of feces is the one complication that frightens the physician and often the patient from receiving the benefit of an operation. It is not as likely to occur as is generally believed as the internal sphincter is seldom cut. If cut square across

the fibres, the muscle will generally heal and be in as good condition as formerly. In my own practice I have never known of a case of incontinence of any importance, but have had one or two where the cutting was very extensive that were slightly bothered when the feces were liquid, but not enough to require the wearing of a pad.

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CHAPTER IX.

ULCERATION

Fissure—Irritable Ulcers—Diagnosis—Causes—Treatment—Palliative treatment—Incision—After treatment—Gradual Dilatation—Fissure in children—Divulsion—Rectal Ulcer—Classification of Rectal Ulcers—Treatment—Ulceration of the Sigmoid—Chief Symptoms—Differential Diagnosis—Treatment—Irrigation of the Colon.

IRRITABLE ULCER OR FISSURE.

The term fissure is generally used to designate the condition about to be described, but the proper name is irritable ulcer. It is spoken of as an anal fissure because it is never seen above the internal sphincter. Being located as they are where the terminal nerve filaments are numerous, they are very painful. This and their location distinguish them from the true rectal ulcer higher in the bowel, which is not very painful, in fact, often has no pain attending it.

The diagnosis is as a rule not hard. By separating the folds of mucous membrane and skin, it may

be seen as an angry looking little sore that seems to cause the patient pain out of all proportion to its size.

When a person comes complaining of a severe pain of a lancinating or throbbing character, coming on at or soon after stool, and continuing from one-half to several hours, and located at the anal margin, from which it seems to extend through the back pelvis, it is almost sure that he has a fissure or irritable ulcer.

I know of no disease in which the patient can be given such prompt relief as this, and in no other, unless it be pruritis, is he so grateful. I have seen strong men cry like babies because of pain due to an insignificant looking sore that seemed to be incapable of causing so much suffering.

This disease is sometimes caused by polypoid growths, piles, internal incomplete fistula, or syphilis, and these should be searched for in all cases.

TREATMENT.

There are two plans of treatment that may be adopted. The first, or so-called palliative method, may be tried if thought best, and in case of failure, the second, or that of incision, will invariably effect a cure. If the palliative method is to be used, have

the patient keep the bowels quite soft, being careful to not cause diarrhoea, and restrict his diet largely to fluids. Caution him to keep the parts clean by frequent bathing with cool water. Once

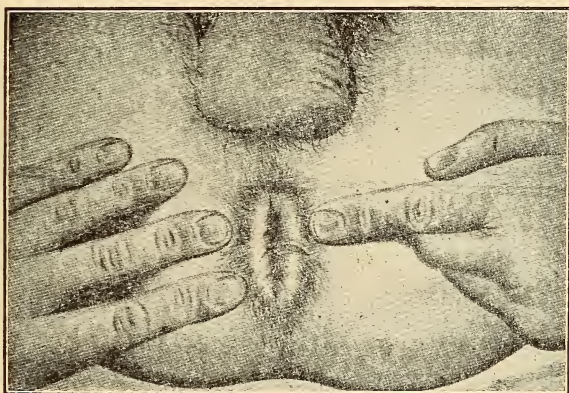


Fig. 39. Typical irritable ulcer or fissure.

every two or three days for a while brush the ulcer with a twenty per cent solution of silver nitrate.

The advice to use the solid stick is, in my opinion, bad, as it is not the intention to cauterize the ulcer, but to coat it over with a solution of albuminate of silver. If the parts are inclined to be dry and crack easily, the patient should be provided with some heavy ointment. One composed of the carbonate of lead 1 dr., iodoform 1 dr., beef suet 4 dr., is the best.

On the other hand, if too moist, a dry powder should be used. The following is excellent: Camphor 2 dr., carbolic acid 15 gtt., crete precip (English) 2 oz., zinc oxid pulv. 2 dr., perfume q. s. Reduce the camphor with alcohol and mix the other ingredients thoroughly and sift through bolting cloth of one hundred meshes to the inch. This, by the way, is a most valuable powder for chafing anywhere, and I have used it with great satisfaction as a toilet powder on babies in hot weather.

Agnew of San Francisco speaks very highly of Salicylic Acid, but I have not had sufficient experience with it to form an opinion as to its merits. The following formula is the one used by him:

Acid salicylic	gr. 15
Morph. Sulph.	gr. 1
Ungt. bellad.	oz. 1

M. Sig. Apply twice daily.

The old formula recommended by Cripps is very good to relieve the pain immediately following an action of the bowels:

Ext. Conii	dr. 2
Olei Ricini	dr. 3
Ungt. Lanoline q. s. ad.....	oz. 2

Mix.

Since the introduction of orthoform, I have found nothing else necessary to relieve the pain. It has the peculiar power of relieving pain for several hours when applied to broken surfaces where nerve ends are exposed. If put on an unbroken surface it is not so valuable. The best way to use it is the application of the dry powder to the fissure, but it may be put into an ointment and in this way made more convenient for the patient. The following is a convenient form:

Orthoformgr. 15

Ext. belladonnagr. 1

Ungt lanoline q. s. ft. ungt.

Mix.

This may be used through a hard rubber ointment pipe as shown on page 196 or simply applied with the finger. Should the pain extend well up into the rectum where it is difficult to reach, the above formula may be made into a suppository by substituting oil throbroma for lanoline.

In case the suppositories cannot be introduced into the bowel because of the pain they cause, an ounce or two of warm starch water to which has been added from twenty to thirty drops of tr. opii may be carefully injected as recommended in proc-

titis. It is seldom necessary, however, to apply anything above the sphincter muscle, as the fissure is very seldom above that point.

The formulas given above are mainly for the relief of pain and do not have much curative effect and at the same time they are being used a more stimulating preparation should be applied. There is nothing that has given me greater satisfaction than ichthyol. It may be used pure by applying it once daily to the fissure or if preferred it can be made into an ointment or suppository.

The application of pure ichthyol is not painful and may be used freely without cocaine anaesthesia. It should be applied once daily by the doctor and not left to the patient as he will not be likely to do it as it should be done. If kept up patiently for from one to two weeks a cure may be expected in a large proportion of cases. A few, however, will resist all efforts towards cure and some form of operative procedure will be required.

OPERATION BY INCISION.

By this method some of the muscular fibres of the external sphincter are divided. It is, as a rule, not necessary to cut the internal sphincter, or even all of the external. The operation is done by in-

jecting under the ulcer a few drops of a solution of cocaine, and then drawing a sharp knife through its floor. This cures, not by the inflammation established, but by allowing the muscular fibres to rest until healing has taken place.

This is proven by the fact that a cure results even though the incision is made through the muscle at some other place than the base of the ulcer; also by the fact that in cases where two ulcers exist a single division will cure both of them. Should the ulcer extend too high to allow the upper end to be reached easily, a small speculum may be used, being careful to direct the blades away from the affected side. After the incision has been made, place a pledget of cotton dipped in corrosive sublimate solution, one to two thousand, in the wound, and apply a pad and T-bandage.

While this little operation is simple and easily done, it is one of the most satisfactory procedures in the whole range of rectal surgery, for the following reasons: It permanently cures the patient, there is no possible danger of injury to the sphincter, causing incontinence, neither is there the possibility of death from chloroform, as might occur where the sphincters are forcibly dilated. The pain is instantly

relieved, and does not return. To be sure, there is some pain from the cut made, but it is trivial in comparison to that due to the fissure, and soon passes away.

The after treatment consists in keeping the bowels from moving for two or three days, after which a mild cathartic should be given, a small dose of castor oil being as good as anything; when the desire for an evacuation is felt inject into the bowel an ounce of sweet oil. The patient should be kept in bed for a few days, and a mild boric acid dressing applied. Once daily a hot corrosive sublimate solution, one to three thousand, should be used to irrigate the parts. After the first week the patient may attend to his ordinary business, although the wound will not be entirely healed for two or three weeks.

GRADUAL DILATION.

This method may be used in some cases with little pain, and very fair results, especially in infants. This disease is found quite often in children, and a prominent New York specialist in the diseases of children says that "when a child cries persistently, and if it is certain that it is not hungry or suffering from some digestive trouble, it is always well to

examine for fissure." In such cases have the nurse oil her little finger and carefully insert it into the bowel, going up a little higher each day. In case the pain is too severe, the fissure may be touched with cocaine solution. Some soothing ointment should also be used.

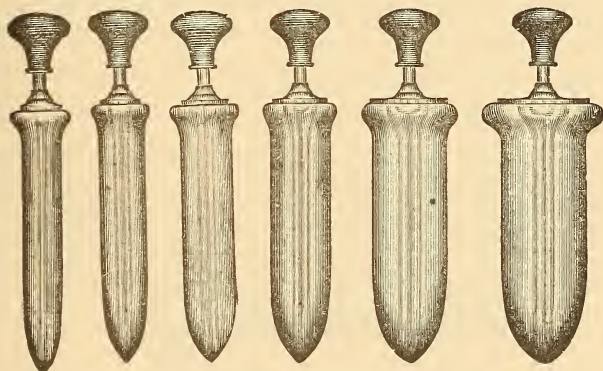


Fig. 40. Dilators for gradual dilation of sphincter.

In adults about the only thing that can be expected in the way of cure is by the introduction of a small size dilator, and when it gets so it can be inserted easily a larger one may be used; or the surgeon may use a small speculum and carefully dilate the blades all that the patient will permit. This is too painful for the average patient, and very few of them will submit to more than one treatment of this kind.

DIVULSION.

Forcible divulsion under chloroform as described on page 110 will cure every case and is to be preferred where the milder methods above mentioned fail.

It cures by causing the muscle to be at rest from overdistention and paralysis thus giving the ulcer time to heal.

RECTAL ULCER.

The true rectal ulcer, or that form found above

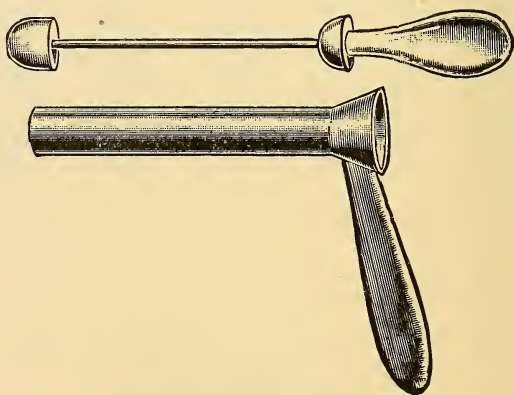


Fig. 41. Cylindrical speculum for examining the higher parts of the rectum.

the internal sphincter muscle, is not seen as often by the general practitioner as some would have us believe. However, it is sometimes met, and is no

doubt often overlooked, and the patient treated for some other trouble.

When a patient complains of diarrhoea that has extended over a considerable portion of time, and is not controlled by ordinary treatment, it is fair to presume that there is an ulceration of the rectum or sigmoid. Should the discharge be streaked with blood and mixed with mucus and shreds of membrane, the diagnosis will be almost certain. Pain is not a prominent symptom, and unless the ulcer is close to the sphincter, may be altogether absent. The diagnosis is best made with the tubular speculum of such length as may be necessary. If not too high in the bowel the proctoscope will reveal the lesion perfectly. Should it not do so, the sigmoidoscope may be introduced as far as possible, the obturator withdrawn, and a strong light thrown upon the tissue exposed; by slowly withdrawing the instrument every portion of the surface of the mucous membrane from its upper end is plainly exposed to view. Should an ulcer be present, it may be easily recognized, as it will have the general appearance of an ulcer in any other part of the body.

The disease is usually classified as follows:

Traumatic, Syphilitic, Dysenteric, Tubercular, Catarrhal, Rodent,

TREATMENT.

This will depend largely upon the character of the disease. Many times it is impossible to tell just what kind of an ulcer we have to deal with, but as the general characteristics of all are about the same, the treatment will not vary a great deal. The traumatic is probably the most common, and is due to an injury of some kind, as an impaction of feces,

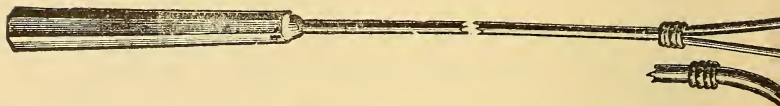


Fig. 42. A good sponge and cotton holder for rectal work. foreign substances lodged in the rectal pouch, or introduced from without, or from ulceration of a strangulated pile, etc.

It is very important that the bowels be kept loose, and that they be well washed out after each movement with warm water. Two or three times a week an enema of water should be used containing about forty drops of nitric acid to the pint. This is especially beneficial in the catarrhal form. Once or twice a week the ulcer should be exposed, and a solution of silver nitrate, twenty grains to the ounce, applied. In case the edges are indurated and shelving

the whole surface should be curetted, and pure nitric acid applied, followed at once by a strong solution of soda to neutralize the acid. The patient should remain in bed and be put upon a liquid diet while this is being done.

The bowels should be moved daily by injecting a pint of flaxseed solution, or an ounce of sweet oil. Of course, care should be exercised in regard to cur-etting or applying acid to too large a surface, as there will be some contraction, but in the majority of cases the surface involved is so small that there will be no danger.

When large ulcerations exist, involving nearly the whole surface of the bowel, solutions of silver nitrate, of from five to twenty grains to the ounce, should be used two or three times a week. After allowing this to remain in the bowel for a few minutes, it should be flushed out with a weak solution of sodium chloride and equal parts of water and fluid hydrastis (not fluid extract) should be used and retained if possible.

In case there are varicose veins about the anus, and the mucous membrane seems lax and inclined to prolapse, Dist. Ext. of Hamamelis should be used instead of the hydrastis. If the ulceration is thought to

be syphilitic, treatment for this disease should be given and kept up for a long time. If this is not done the disease will return even though apparently cured. In syphilitic cases the ulcer should be dusted frequently with dry calomel.

In the *tubercular form* of the disease but little can be expected from local treatment. In most of

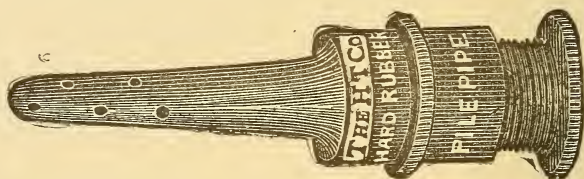


Fig. 43. Pile pipe for applying ointment to ulcers.

these cases there is a local tendency toward a breaking down of all the surrounding tissues. This is usually first seen by the physician as a tubercular abscess or fistula. Treatment should be mainly constitutional.

The *rodent ulcer* is very closely allied to epithelioma, and some authors say that it is one of its varieties. It may be recognized by the fact that its edges end abruptly in healthy tissue; its surface is red and dry, it never entirely heals, and it is one of the most painful of all rectal affections. It may easily be distinguished from the irritable ulcer by its

general appearance, which as a rule is confined to mucous membrane, while the irritable ulcer is at the junction of the skin and mucous membrane, and involves both; but more especially by the constant pain. The treatment of rodent ulcer is so unsatisfactory that it is not worth while to attempt its cure except by surgical means under chloroform.

ULCERATION OF THE SIGMOID.

Owing to the fact that this disease is too high to be easily reached from below, and too low to be easily found by palpation from above, it is often undiscovered. Diagnosis must be made mainly from subjective symptoms.

The chief symptoms of inflammation of the sigmoid and colon are diarrhoea and abdominal pain, but pain is often not prominent except in acute cases. Diarrhoea, however, is always present, varying in degree according to the severity of the condition, and whether simple inflammation or ulceration is present. If there is simple acute or subacute inflammation, the stools contain no blood, but are very frequent and watery; if ulceration be present, blood and shreds of membrane will be present. The stools often number fifteen to twenty-five a day, and in many cases the desire to empty the bowel is constant.

In addition to the above prominent symptoms there will be marked, constitutional changes, such as loss of flesh, sallowness of the skin, and general weakness. Owing to the large amount of watery elements taken from the blood, there is considerable disturbance of the circulatory system, including palpitation, weak pulse and shortness of breath.

The general weakness, and sometimes apparent lung trouble, lead the practitioner to suspect tuberculosis, and, although the tubercle bacilli cannot be found in the sputum, the bowel symptoms would indicate intestinal tuberculosis. Owing to this diagnosis many patients have died who might have been saved had a true knowledge of the trouble been arrived at.

It is sometimes very difficult to make a differential diagnosis between ulcerative colitis and tuberculosis of the intestine, though in the latter there are often well marked lung lesions, which may readily be detected. The most marked evidences of intestinal tuberculosis not found in ulcerative colitis are irregular fever, loss of flesh, sometimes constipation, and profuse sweating, especially at night. The main symptoms, however, are so nearly identical in both diseases that it is often difficult to distinguish between them.

Dr. Mathews says: "The patient drifts from bad to worse, and after a while is a confirmed invalid. May it not be for want of proper treatment? I am certain that many doubtful cases of diarrhoea or dysentery would find an explanation if the sigmoid were searched. Indeed, I have treated many cases and carried them to a full convalescence that had "gone the rounds" as chronic diarrhoea or dysentery. For all such patients I would suggest that the flexure be explored and treated, and many will clear up."

I fully concur in the above statement, and feel sure that several cases under my care have been cured that would have died had the usual treatment by internal remedies been continued. In addition to the methods of diagnosis already mentioned, we can, by using the sigmoidoscope and electric light, arrive at an absolutely correct knowledge of the conditions present in most cases.

Treatment consists mainly in giving the patient but little bulky food that will load the colon, and following about the same lines as directed for rectal ulceration. The mild astringents as Fl. Hydrastis, Pinus canadensis, weak solutions of silver nitrate, etc., should be used daily. Once a week, if there is

much blood discharged, a solution of silver nitrate, ten grains to the ounce, should be used. Hot water in large quantities has a stimulating effect upon the mucous membrane and should be used freely. This is done just preceding the injection of the medicine, and the latter is then injected and retained.

In giving a high enema, the surgeon should use a Wales rectal bougie, but where the patient or nurse attends to this, I believe so stiff an instrument is dangerous in inexperienced hands, and might perforate the bowel. Some patients can force water into the colon with an ordinary syringe, while with others it can scarcely be made to enter even the descending colon.

There is considerable skill required in giving a high injection. As usually given, little, if any, more than the rectal pouch is filled, when the desire for an evacuation becomes so urgent that it cannot be retained, and of course, does no good. The patient should be placed on his side or back, as preferred, with the hips elevated, and a long rectal tube carefully introduced so far as it will go easily. When an obstruction is reached, a little water forced gently through the tube will usually relieve it from the folds of membrane in which it is caught, and it can then

be pushed on until it passes the sigmoid, and the end lies in the descending colon.

Now if the fluid be allowed to flow very slowly to the upper part of the colon first, the rectal pouch will be filled last, and of course, all desire for an evacuation will be prevented until the large bowel is nearly or quite full. By removing the rectal tube from the attachment to the syringe or irrigator, the water can be allowed to flow out and a fresh supply introduced, thus filling and emptying the entire colon, so that the medicine used has been brought in contact with all the diseased membrane.

A tube with an opening in the end, made for washing out the stomach, is better than an ordinary rectal tube, as the latter is too short. Any intelligent person can be taught to do this properly, and while it necessitates a great deal of work, the seriousness of the disease, and the results that may be expected, will fully repay the trouble.

IRRIGATION OF THE COLON.

There are certain conditions of the pelvic organs in which irrigation of the colon with hot sterile water or normal salt solution is of great benefit, not only to the diseased organs themselves, but to adjacent organs. When it is remembered that the pelvic

contents are very closely related, both as to position and blood supply, and that their nerves are all from practically the same source, it is easy to appreciate how the application of moist heat to the interior of the colon would be beneficial to other organs.

The effect locally is to wash out hardened fecal matter, dissolve and remove tenacious mucus, broken down epithelium and other catarrhal products, and stimulate the secreting glands as well as the muscular wall of the bowel, thus arousing its peristaltic action. In addition, the kidneys are aroused to increased action, and as considerable water is absorbed through the blood vessels of the bowel, the amount of urine is increased, carrying with it much waste matter.

The benefit to other pathologic conditions of the pelvic cavity is derived from the local heat in addition to the general effect upon the circulation and kidneys, and this procedure is indicated in pelvic inflammations of almost any character; also in collapse, shock, dysentery, yellow fever, typhoid fever, etc. In suspected cases of the latter disease I have by long-continued and repeated irrigations removed hardened fecal matter from the region of the cecum that had resisted the action of the most searching

cathartics, and apparently had lain in that locality for weeks. After their removal the typhoid symptoms would at once clear up. In these cases there seems to be an accumulation of fecal matter which acts as a reservoir from which toxins are absorbed.

I believe this to be true also in many other diseases, as cephalalgia, vertigo, indigestion, anaemia, chlorosis, and to a limited extent, in many others. One of our best clinicians has been quoted as saying that in his opinion "acute interstitial nephritis is often caused by the extra work thrown upon the kidneys, due to a constantly overloaded colon."

Sir Andrew Clark said that his reputation was made largely by his success in treating chlorosis, and this consisted mainly in keeping the colon free from toxins, and the judicious use of iron. This being true, the value of flushing the colon with hot water is no doubt superior to the use of cathartics. In retention of urine, especially if due to spasmodic action, a ten-minute irrigation of the colon with water as hot as can be borne, will in many instances, start the flow.

In acute inflammatory conditions of either the colon, rectum or adjacent parts the irrigation should be done two or three times a day, and continued for

from fifteen to thirty minutes, using a double current rectal tube; by compressing the outflow tube the colon may be completely filled, in this way keeping from two to three pints of water in contact with the rectal wall all the time.

If the water is very hot, it will not as a rule cause colicky pains, and if allowed to flow slowly at first, the desire for an evacuation, which usually occurs as soon as the rectal pouch is filled, will soon



Fig. 44. Double current irrigating tube.

pass away; a long rectal tube is not necessary. The best position is on the back with the hips slightly elevated, and a fountain syringe with a fall of about four feet is to be preferred.

In case there is no inflammatory condition, once or twice a week is often enough to use the water, and unless there is some well-defined reason for doing so, it should not be used at all. In ordinary constipation it should be considered as only an adjunct to other measures, to be discontinued as soon as possible.

The use of this treatment in health or as a constant practice in constipation, is to be deprecated, as it washes away the natural secretions and destroys the rectal nerves so that a bowel movement cannot be had without this unnatural stimulus.

CHAPTER X.

PROLAPSE OF THE RECTUM

Falling of the bowel—Classifications—Incomplete—In Children—Causes—Symptoms and Diagnosis—Complete Prolapse—Causes—Diagnosis—Treatment for Partial Prolapse—Treatment for complete Prolapse—Tuttle's Operation.

Used in its broadest sense, prolapse means a falling or descent of the bowel so that it protrudes outside the body. The disease is one that causes a great deal of suffering and in some of its forms is very hard to cure. In procidentia the bowel may not appear outside of the body in its early stages but will do so if left untreated.

The disease is divided into two kinds, the *complete* and *incomplete*. The *complete* is that form in which all the coats of the bowel, in some cases even the peritoneum, are protruded, while in the *incomplete* only the mucous membrane comes out. The *incomplete* or *partial* form in its early stages is only an exaggerated protrusion of the normal mucous

membrane as it turns outside the anus at defecation. Under certain conditions it becomes protruded farther and farther until it becomes pathological.

As before stated a procidentia or intussusception is a doubling or invagination of the bowel within itself and it may or may not protrude at the anal orifice, depending entirely upon at what period of its development it is met with.

Incomplete or Partial Prolapse. This occurs nearly always among children and generally has its origin in the summer diarrhoeas and is brought about by straining at stool. Anything that causes excessive straining such as stone in the bladder, phimosis, etc., may bring it about. In children the sacrum is very much less curved than in older people and the pressure is more nearly in a straight line than it is in adults, in whom it is against the curve of the sacrum.

Paralysis of the nerves that supply the parts or any condition that takes away the natural support from below, as a relaxed sphincter muscle, may cause it.

As a rule the prolapse comes on suddenly and the mother or nurse is greatly frightened; again it may come on slowly and be several months in de-

veloping. Some authors say that it never develops suddenly, but in this I am sure they are mistaken as I have seen several cases in my own practice that came without any previous symptoms. The first thing the mother recognized as being out of the normal was a mass two or three inches in length protruding from the anus.

Symptoms and Diagnosis. As just stated, the first thing noticed is a protrusion of a mass from one to three inches long extending from the anus immediately following a severe fit of straining. This will not return of its own accord as the sphincter muscle is highly irritated and is inclined to spasmodically contract. The longer it remains out the more swollen and congested it becomes.

It cannot well be mistaken for anything else unless it might be hemorrhoids, but these come down in distinct tumors that are attached to one side of the bowel, while prolapse is a ring all around and does not come down much if any more in one place than another. There is one condition that is often seen in adults that is very confusing to the inexperienced. These are cases where there are several large internal hemorrhoids that do not entirely protrude but force a ring of mucous membrane down in front of them.

A careless examination reveals nothing but the prolapsed bowel and the cause immediately above it is overlooked. By having the prolapse forced out and then asking the patient to strain down with considerable force they may be seen. They may easily be felt at this time by the examining finger.

In case the prolapse comes on slowly, it is accompanied by a lax sphincter which removes the support that holds it up and as this is essentially a disease of childhood the mother will observe the condition before it becomes serious and have such measures adopted as will check it. The differential diagnosis between this and the complete form will be discussed under the latter.

Complete Prolapse. This occurs most often in adults and is a much more serious matter than the partial. All the coats of the bowel protrude, even the peritoneum in some cases, and occasionally coils of small intestine. It may be distinguished from the partial by its thick, solid feeling and also by the fact that the folds run around the mass, while in the partial they are longitudinal. The disease is not likely to be complicated with hemorrhoids. It comes on gradually and may be due to unusual force applied from above or lack of support below, or both combined,

Chronic constipation, especially when accompanied with catarrh of the bowel, may cause a gradual thickening of the walls that may bring it about. When once the bowel has begun to protrude the constant irritation occasioned by its slipping out and in will cause hypertrophy of its walls that make it too large for the place it is supposed to occupy and for this reason nature is constantly trying to force it out. Polypoid growths of the sigmoid may drag the bowel down until it protrudes.

There are three forms of complete prolapse recognized by most authors, all of which are really different degrees of the same condition. The first is that just described or where all the coats of the bowel are forced out, beginning at the anus.

The second is where the beginning of the descent is slightly above the anus and the third is where the beginning is a long distance above the anus or possibly in the sigmoid or colon. In each of the two latter forms there is a distinct sulcus into which the finger may be placed between the protruding part and the sphincter muscles. This is not true if the third form has not appeared at the outside, as is sometimes the case. While these cases are extremely rare, I will quote the description given by Van Bueren, as it is very plain:

PROLAPSE OF THE RECTUM. 211

1st. "The most common, in which the greased finger, passed carefully around the base of the tumor, recognizes that its external surface is absolutely continuous with the membrane that lines the orifice of the anus without the existence of a sulcus. Here the bowel begins to slip out originally by its very lowest portion, and this had gradually formed

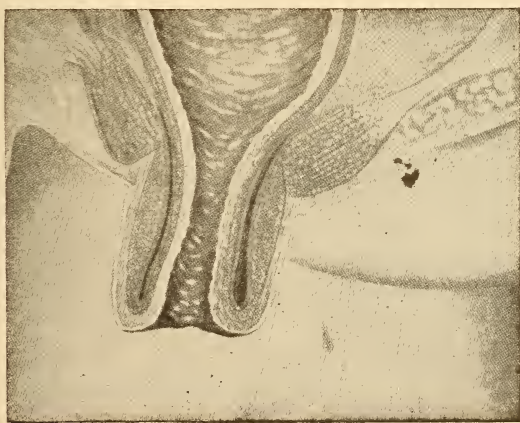


Fig. 45. Complete prolapse of the rectum. (Tuttle.)
the outer layer of the protrusion, the gut, as it is forced down from above, passing within it. This form of complete prolapse follows simple protrusion of the mucous membrane, or partial prolapse when the latter has been neglected.

It results from a persistence of the causes which are keeping up the latter, and effecting its gradual increase by dragging upon the outer coat of the gut, when the submucous connective tissue will no longer yield. Such a tumor always contains more or less peritoneum, and it is important that you should never lose sight of this fact. The peritoneum, you will remember, surrounds the rectum on all sides and extends downward to an oblique line three inches and a half from the anus in front and scarce five behind. The peritoneal reflection at the base of a protrusion of this kind is, therefore, always larger in front.

2nd. Where the finger can be inserted into a groove alongside the base of a tumor, so as to recognize a distinct sulcus, of more or less depth, at the bottom of which, if not too deep, the lining membrane of the gut may be felt as it is reflected from the base of the protruding tumor. In this case the rectum has begun to fold upon itself. In other words, to become invaginated, or, in the language of the day, 'telescoped,' the upper part of the bowel always passing within the lower, at a point more or less distant from the anus, yet generally within reach of the finger.

3rd. In this variety the finger can be inserted

through the anus alongside the protruding tumor, but cannot reach any line of reflection of the mucous membrane of the rectum upon the tumor, the latter, in fact, may not even as yet have protruded through the anus, but may be felt only as a polypoid mass, occupying the cavity of the rectum. Here invagination has taken place higher up in the colon; has possibly commenced in the caecum or even in the lower part of the ilium, which, sucked through the ileo cecal valve, has been carried with the cecum itself up the ascending colon, and, the connecting attachments gradually yielding, the invaginated mass has been propelled along the whole length of the colon and finally presents itself in the rectum, or may possibly extrude externally. This almost incredible displacement of the parts has now been certainly recognized in so many recorded cases, examined after death, that it were inexcusable to fail to recognize it during life."

TREATMENT.

Partial Prolapse. Often the first thing the physician is called upon to do is to reduce the prolapse. If it has been out a long time this may be a difficult thing to do. The parts become dry and swollen and if the patient is a child it will cry and strain until

it seems impossible to get it back. Gravity helps more than anything else and the child should be as nearly inverted as possible; this will carry the contents of the abdomen and pelvis away from the rectum and the protruded mass will usually slip back in place. Gentle taxis should be made upon it while

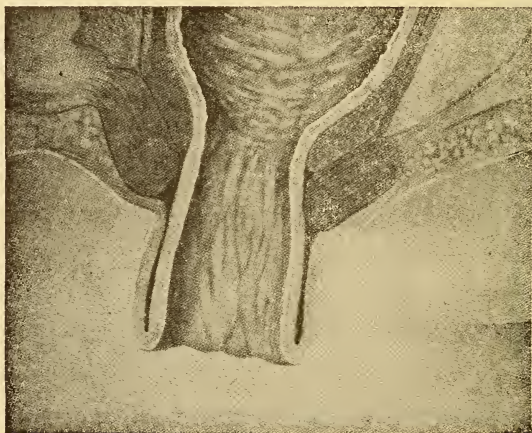


Fig. 46. Incomplete prolapse of the rectum.—(Tuttle.) this is being done, always remembering that the part that came out last should go back first.

If the above measures fail, chloroform should be given which will relax the muscles and stop straining sufficiently to allow it to be reduced easily. In most cases there will be no further trouble if a little care

is used by the mother. The patient should be put in bed and kept there for some time and the buttocks drawn together with a broad strip of adhesive plaster. When it is necessary for the bowels to move the plaster may be cut through the center and later drawn together with laces.

The child should not be allowed to sit on the commode but be made to use a bed pan. After the movement a little cold water should be injected into the bowel, to which has been added some alum, fluid hydrastis or other astringent. Of course if there is anything that is keeping up the irritation and straining, like phimosis, stone in the bladder, hemorrhoids, etc., they should be attended to.

If these palliative measures are not sufficient, more radical ones should be adopted. Allingham recommends the application of pure nitric acid. Some prominent men say it should never be used. In my hands it has been very satisfactory when used on children, but is not very satisfactory in adults. The object is to establish an inflammatory action that will cause the mucous coat to adhere to the tissues immediately beneath it.

To do this the protruded mass is rendered in-

sensible to pain by the application of cocaine and four or five lines are made with acid in the long axis of the protrusion. After waiting a few minutes a strong solution of soda is applied to neutralize the acid. The child should be put in bed and kept slightly under opiates to relieve pain and bind up the bowels. The diet should be very light and no bowel movement allowed for four or five days. About the same result may be obtained by applying the cautery at a dull red heat. This is done in the same way as the acid only the application is made before the prolapse is forced out.

Tuttle recommends an injection at several points around the circumference of the anus of from three to five drops of modified Shuford's solution. After this is done a rubber drainage tube is inserted and the rectal ampula packed with gauze to hold the gut in position. This will allow the escape of gas and the bowels should be bound up for from seven to ten days. He advises that "a firm compress be put over the anus and the patient be kept more or less under the influence of opiates." "If carefully performed with proper antiseptic precautions, there is no danger of suppuration or sloughing in this method, and the percentage of cures is fully equal to that

by the cauterizing methods mentioned above."

The modified Shuford's solution referred to is prepared as follows and is recommended by the same author for the injection of hemorrhoids:

Acid carbolic (Calverts)	dr.	2
Acid salicylic	dr.	1/2
Sodii bi-borate	dr.	1
Glycerine (sterile) p. s. ad.	oz.	1

M.

Treatment of Complete Prolapse. This depends upon the conditions present. There are three main indications, viz.: to remove any exciting cause, as hemorrhoids, tumors, etc., to hold the bowel up from above and to improve the support below. In addition much good may be accomplished by constitutional treatment.

Many of these cases are greatly debilitated from long illness or other causes and if the prolapse can be held in place until the general health is improved it will remain there. The methods described for partial prolapse will not be applicable in the complete form. If the mass is too large to remain in its place when reduced, and constantly acts as a foreign body, an operation may be done with the clamp and cautery the same as recommended for

hemorrhoids, only instead of removing tumors three or four sections of the bowel are clamped and cauterized, each being removed in the long axis of the bowel.



Fig. 47. Complete prolapse originating above the internal sphincter.—(Tuttle.)

The prolapse is then reduced and kept confined for several days. This sets up an inflammatory action that unites the whole intestinal surface to the surrounding parts and at the same time reduces the size of the rectum so that it ceases to be too large and no longer acts as a foreign body.

If in addition to the operation just described,

the abdomen is opened and the bowel drawn up until it will come no further and then fastened in the abdominal wound the cure is likely to be perfect.

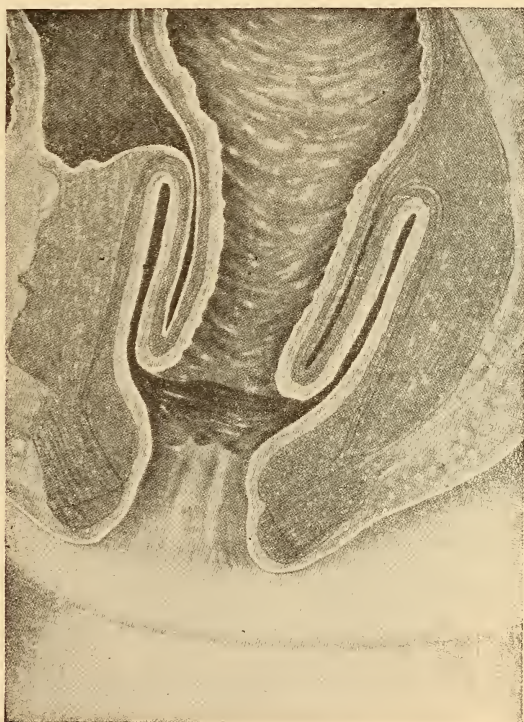


Fig. 48. Complete prolapse which begins high in the rectum or sigmoid and does not appear outside.—(Tuttle.)

Tuttle's Operation. This is one of the most sat-

isfactory operations with which I am familiar and will result in a cure in most cases, provided not more than six inches of bowel protrude.

Should a large amount of gut protrude, showing

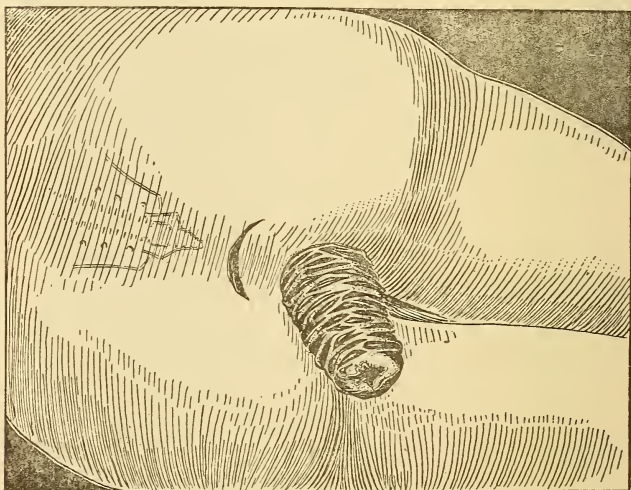


Fig. 49. Showing the first step in operation of suspending prolapsed rectum to sacrum.

that the attachments high in the pelvis are not performing their functions, this operation will not be successful, as it only fastens the lower end of the bowel and that portion left loose above this point will be forced down through the portion anchored to the sacrum producing an intussusception or invagination.

The following technique is followed in performing this operation: The patient is prepared by getting the bowels as nearly empty as possible so that

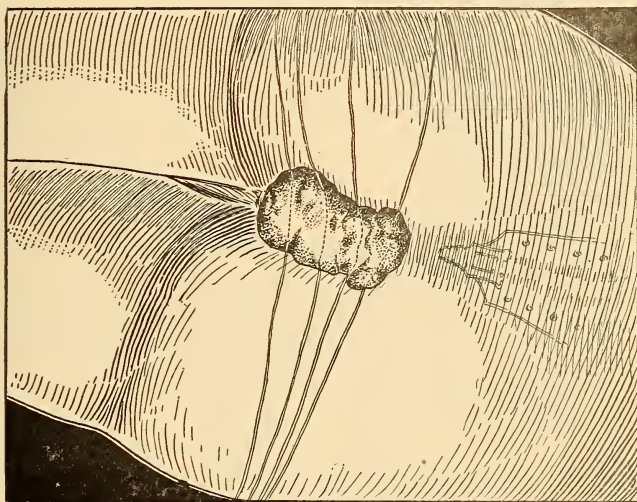


Fig. 50. The prolapsed bowel is now brought out through the incision previously made between the coccyx and anus and silkworm ligatures introduced.

a movement need not be had for five or six days after the operation. The parts should be shaved and soap and bichloride poultices applied the night before.

The best position is a rather exaggerated "Sims." with the hips well elevated. With the patient in position the gut is pulled down as far as it will go.

A semicircular incision is now made midway between the anus and the coccyx, going down to the descending bowel inside, but being careful not to cut through it.

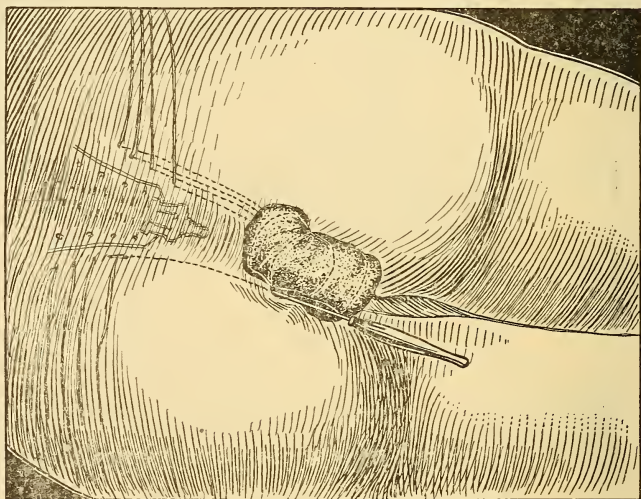


Fig. 51. With a long Persley's needle the ligatures are carried up through the incision and out on each side of the sacrum, each to correspond, as nearly as possible to its position in the bowel wall.

With the fingers the rectum is now separated from the coccyx and sacrum nearly if not quite to the top of the latter. The interior surface of the sacrum is now curetted to remove any fascia or fat that may be present. The prolapse is now reduced and pushed out of the opening previously made.

It is well to remove from the bowel thus drawn out any fatty matter that may be present and swab it with a strong mercuric solution (one to five hundred), or Lugol's solution of iodine, so that adhesions may form.

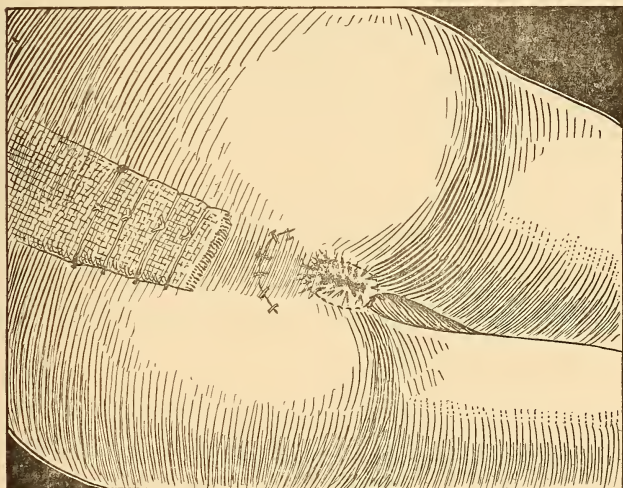


Fig 52. All are now tied over a gauze pad drawing the bowel up tightly against the anterior wall of the sacrum. The incision is closed and the kangaroo tendon inserted.

Long silk worm gut or silver wire is now placed through the muscular coat of the posterior wall of the bowel embracing about one-third, if possible, of the bowel wall. Three or four of these are put in,

depending upon the length of the prolapse. After this has been done each ligature, beginning with the upper one, is threaded on a long handled Peasley's needle and introduced through the opening into the ano-rectal space, carried along the anterior surface of the sacrum as high as the denudation has been done and thrust through all the intervening tissues close to the sacral bones until it can be grasped by forceps, removed from the needle, and the latter withdrawn.

The ligature on the opposite side and all the others are introduced in the same way. Each set is pushed through as close to the side of the sacral bones as possible and about one-half inch below the one above it.

If any blood clots are present they should be wiped out and by making traction on the ligatures the prolapse is pulled up into the hollow of the sacrum, a gauze pad is put on the outside and each set of ligatures tied over it.

If the sphincters are much relaxed a silver wire or kangaroo tendon is run under the tissue around the anus and tied over the index finger. This narrows the anal outlet and acts as a support to hold the parts up. The bowels should not be allowed to

move for a week or more, when they should be induced to act by a boracic acid enema. A movement sitting up should not be allowed for three weeks. The incision made between the anus and the coccyx should be closed with catgut sutures. The silk-worm sutures should be left in about two weeks.

There are several most excellent operations for the cure of complete prolapse, but as they come under the head of major surgery, the reader is referred to the larger textbooks for a description of the technique.

CHAPTER XI.

NON-MALIGNANT GROWTH

New Growth—Polypi—Neoplasmes—Size of Polypi—Usually soft and pliable—Complications—Symptoms and Diagnosis—Classification—Adenoma—Fibroma—Papilloma—Teratoma—Lipoma—Cystoma—Enchondroma—Anginoma—Treatment.

It is a well known fact that in all mucous cavities of the body there may be found new growths of a benign nature. These are especially liable to affect the lower end of the large intestine because of its more exposed position and greater chance of being injured. These growths may be found in all parts of the intestinal canal, but are much more frequent in the rectum. According to Leichenstern they occur in about the following relative frequency in the intestinal canal: Duodenum, 2; ileum, 30; iliocecal valve, 2; cecum, 4; colon, 10; and rectum, 75.

The general practitioner is likely to designate all of these growths as hemorrhoidal and even good sur-

geons often fail to diagnose them properly. When small they cause but few symptoms and unless they protrude may be entirely overlooked. Bodenhamer says, "The writer in a private practice of fifty-nine years, has treated ninety cases of rectal polypi, so called, in persons aged from three to seventy-five years; fifteen were in children under five years old, forty-five were adult females, and thirty were males."

Some men prominent in the profession say that they never saw a case, but no doubt, like many other diseases that were unknown in the past and are now considered new, better methods of diagnosis and more perfect attention to the technique of examination enable us to recognize these cases where we would not have done so in the past.

These new growths or neoplasms are generally called polypi, but the latter term includes all tumors that are attached by a pedicle that is smaller than the tumor itself, so any growth may be a polypus but any polypus is not necessarily a special variety of tumor. Many tumors are attached by a broad flat base and yet they go by the name of neoplasm or polypus and as these terms have in the past been regarded as synonymous they will be so considered

here. As before stated, these tumors may be found in any part of the intestinal canal but are more frequent in the rectum and the most common point is the lower three inches of this cavity.

They may occur singly or there may be two or more; in rare instances the whole mucous membrane may be covered with small granular masses not larger than a mustard seed. They are generally pyriform in shape and are attached by a slender pedicle, but they may be round and have the appearance of earth worms, some of them measuring two or three inches in length. In size these growths do not as a rule get larger than a hen's egg, but there have been cases reported where the tumors were as large as a medium sized orange.

The consistency and texture of these growths vary but they are usually soft and pliable, often feeling like mucous membrane. In appearance they are smooth in the early stages, but may become lobulated and roughened by the irritation of hard fecal matter. The constant tension to which they are subjected during a bowel movement tends to lengthen the pedicle and in some cases they are actually forced out and the pedicle torn from its attachment, thus effecting a cure.

They may be complicated with other diseases and in most of the cases that have come under my observation there have been hemorrhoids in addition to the other tumors. The fibroid tumor is said to be the cause of fissures or irritable ulcers because of the effort on the part of nature to force them out, thus lacerating the mucous membrane.

Symptoms and Diagnosis. In the early stages there are no symptoms, but when the tumor becomes well enough developed to protrude, it at once makes itself manifest and is usually considered a hemorrhoid. If located in the upper part of the rectal cavity, there may be a discharge of mucous and blood mixed, thus making it difficult to distinguish between the malignant and non-malignant form of the growth. As the treatment would be the same in either case it does not matter especially as the microscope will settle the question after removal.

There is not much pain unless the growth is quite large when there may be a feeling of weight in the pelvis with dull aching pains in the back and down the thighs. There will also be a good deal of tenesmus and a feeling that the bowel is not entirely emptied.

Hemorrhage from the bowel in children is very

often due to one of these growths and if not diagnosed early, there may often be seen at the anal orifice a small bright red strawberry-like tumor that will appear at each movement of the bowels and be retracted out of sight in the meantime. In all doubtful cases the finger, speculum or proctoscope will generally clear up the diagnosis.

Classification. These growths are usually classified as follows: A brief description of each will be given.

Adenoma.

Lipoma.

Fibroma.

Cystoma.

Papilloma.

Enchondroma.

Teratoma.

Angioma.

Adenoma. This is simply an exaggeration of the minute glands, follicles, or crypts of Lieberkuhn. They are generally found in young persons and may be single or multiple, never growing to be very large. They are attached by a short thick pedicle. They are very vascular which gives them a bright red color. As this growth is made up of an accumulation of the normal follicles of the bowel, it is at first simply a raised or thickened place in the bowel wall. As it continues to grow, the movement of the fecal mass against it constantly pushing it down so stretches the

walls of the tumor that a pedicle is formed, in some cases long enough to allow the tumor to be forced outside.

Fibroma. This is the tumor found most often in

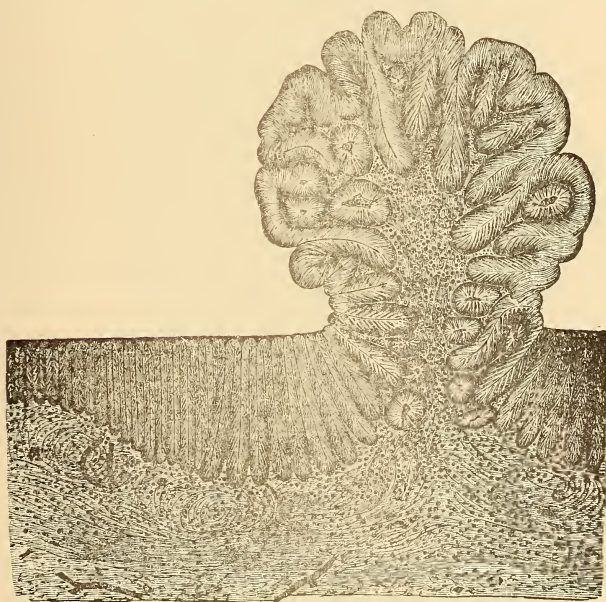


Fig. 53. Vertical section of simple adenoid.—(Kelsey.)
the uterus. It is composed of fibrous tissue but may have glandular and muscular elements. It is most often found in adults. It originates in the submucous connective tissue, is covered with smooth mucous membrane, generally has a distinct pedicle, and

often attains a large size. In some cases the tumor remains in the bowel wall and has no pedicle. Tumors of this kind have been reported that were as

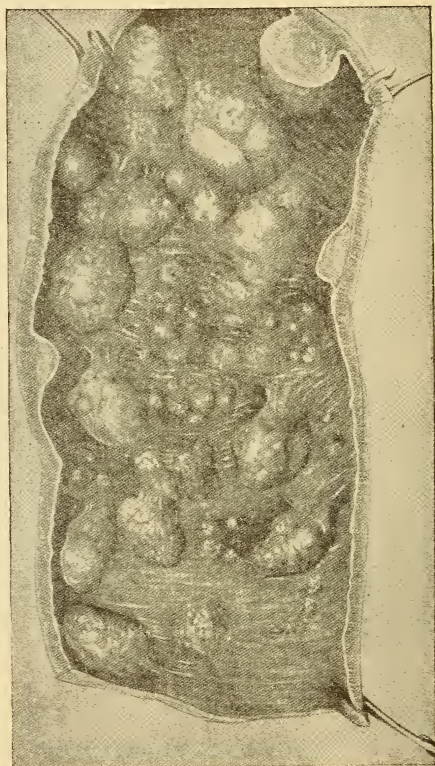


Fig. 54. Multiple adenoma of rectum.—(Tuttle.)

large as a fetal head.

Papilloma. This is an outgrowth or enlargement

of the papilla at the muco-cutaneous border of the rectum. They may be combined with the adenoma in which case we have the so-called adeno-papilloma. This growth appears as long slender processes and is usually seated on a wide base.

Teratoma. This is one of the most infrequent of all these growths. It is a congenital tumor and is composed of some of the elementary cells of the body. Such tumors are not rare in other parts of the body and are most often found in connection with the ovaries. In the rectum, however, they are quite uncommon. These growths may contain hair, teeth, or in fact fragments of almost any of the tissues of the body. A case is on record where the surface of the tumor was covered with normal skin.

Lipoma. This is the ordinary fatty tumor such as may be found in any part of the body. It is composed of a mass of fat cells held together by connective tissue. It is more likely to spring from the upper part of the rectum and owing to its great elasticity the pedicle may be drawn out to a surprising length. It is said that the pedicle may contain a process of peritoneum which makes its removal somewhat dangerous.

Cystoma. This is an exceedingly rare form of

rectal neoplasm. The writer in quite an extensive practice has never seen a case. That such a growth might occur in this place is not to be doubted as they are possible in almost any part of the body.

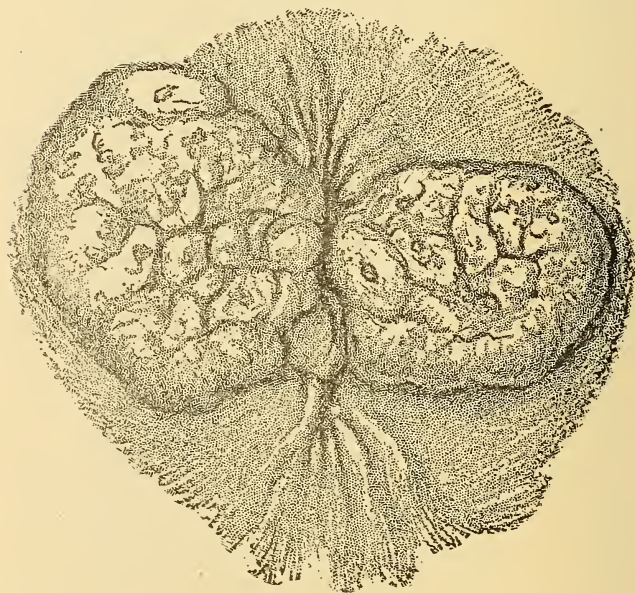


Fig. 55. Syphilitic condylomata.—(Kelsey.)

Enchondroma. This is a firm, tough growth, much resembling cartilage. These are not often found but cases have been reported by Van Bueren, Dolbeau and others. Kelsey says, "Cartilaginous tumors of the rectum proper are of exceeding rarity,

and when found they are generally the result of a secondary change in a tumor primarily glandular, and do not therefore present the well known characteristics of the typical enchondroma."

Angioma. This is an erectile or vascular growth and is very much the same as a venous nævus or macula materna. It consists of dilated veins and

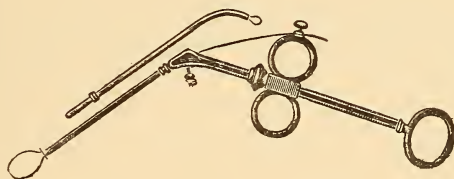


Fig. 56. Snare for polypus and other small growths. capillaries held together by submucous tissue. It has much the appearance of the capillary hemorrhoid but is more in the nature of a growth or tumor and does not bleed easily as the latter does.

Treatment. All of these tumors may be removed by ligating the pedicle and cutting them off. Care must be exercised that the pedicle is not broken off in the effort to pull the tumor down so that the ligature may be placed. Should it be impossible to get the tumor out far enough to place a ligature around it, the snare may be used. This will cut through the pedicle and as a rule no hemorrhage will follow, or

at least not enough to be feared. If the operator thinks hemorrhage likely and cannot apply a ligature, the pedicle may be grasped with a pair of long curved forceps, the tumor cut off and the stump cauterized.

In some instances the tumors have been forced out by the action of the sphincter muscle with such force that the pedicle was torn off and spontaneous cure would result. No after treatment is necessary except ordinary surgical cleanliness.

CHAPTER XII.

PROCTITIS AND SIGMOIDITIS

Causes—Puncture of the Bowel—Acute Form—Chronic Form—Microscopical Examination—Treatment—The one Great Difficulty—Rest—Specific Proctitis—Irrigating the Descending Colon—Amebic Dysentery—The Diet.

Acute and chronic inflammation of the different mucus membranes of the body are very common and manifest their presence in different ways according to the part affected, and whether acute or chronic.

The causes that produce the disease in one place will do so in another. A sudden chilling of the body may cause a so-called cold in the head and sleeping on cold, damp ground may cause a proctitis, which, if left untreated, may become chronic and we have the chronic diarrhea so often found among elderly people, especially old soldiers.

Then again we may have a specific inflammation of the rectal membrane generally due to indirect

causes, as diphtheria, gonorrhea, etc., accidentally carried from some other part of the patient's body to the anal or rectal membrane by means of instruments, fingers or syringe nozzles, or by the discharge in females flowing over the parts.

Among the causes in addition to those already mentioned, probably the most common one is traumatism, either from within or without. From within, serious injury from substances swallowed, as pins, fish bones and other foreign substances. All such things will pass through the stomach and small and large intestine without difficulty but lodge in the rectal pouch and set up an inflammatory process that results in a general proctitis or possibly an abscess.

I have frequently taken such things from abscess cavities in this region. The disease may also be caused by the prolonged retention of hard dry, impacted, fecal matter, which is very irritating. Those causes which act from without are contusions and punctured wounds. It is not very uncommon to have the bowel wall punctured by the rough use of instruments or the finger in making an examination. In a recent issue of the Journal of the American Medical Association, Howard Kelley cites several cases

where the wall of the bowel was punctured by the examining finger. This is more likely to occur in old people.

In case such wounds are uncared for a proctitis and peri-proctitis would result that might be fatal. Kelly says such tears should be repaired by opening the abdomen and stitching from the peritoneal side. Owing to their being so low in the pelvis, it seems to me that this would be extremely difficult to do. In the chronic form of the disease, in addition to the rectal inflammation, we almost always have an extension to the sigmoid and often the whole descending colon may be affected.

In the acute form the pain is very great and is accompanied with tenesmus and considerable constitutional disturbance. There is a constant feeling that there is something more in the bowel, even after the patient has just left the commode, but this is due to the swollen mucous membrane.

When the disease becomes chronic there is not much pain except on deep pressure over the sigmoid. The desire to go to the stool, while not constant as in the acute form, is still very troublesome and there may be from ten to twenty bowel movements daily. This occurs more in the morning than any other part of the day and it is not uncommon to have four or five movements in rapid succession containing noth-

ing but bloody mucus or clear mucus resembling jelly, to be followed by a solid stool. The patient may then pass the rest of the day with but little discomfort.

In its early stages it is difficult to diagnose this disease from cancer of the sigmoid but as the latter is essentially chronic while cancer runs its course in two or three years and as the sigmoiditis does not as a rule fall into the Doctor's hands until it has run for some time the diagnosis is not hard to make. A microscopical examination of the discharge should be made to differentiate between the common inflammations and amebic dysentery. As the ameba are not active in cold solution the examination should be made while the matter passed is still warm.

In the chronic form of the disease the membrane of the sigmoid when examined through the sigmoidoscope has a very dark appearance and looks like fresh raw beef, and in some instances blood may be seen oozing from the bowel wall.

Treatment. In the acute form this consists of rest to the inflamed part, a carefully selected diet and the use of mild, antiseptic, astringent solutions.

The one great difficulty in treating proctitis is lack of drainage. The products of inflammation are

retained behind a tight sphincter muscle and the greater the inflammation the more firmly does the muscle contract. This is true to so great an extent that often it is only with the greatest difficulty that a bowel movement may be had or an irrigator introduced. In such cases the patient had better be put under an anesthetic and the sphincter divulsed.

In punctured wounds where the bowel wall is torn and pus has formed it may be necessary to cut the muscle posteriorly so that proper drainage may be obtained.

There is no one thing that assists nature so much in bringing about a cure in a diseased organ as rest. For this reason, in acute cases the patient should be kept in bed and fed only highly concentrated food, such as will leave practically no residue to pass away. In fact if almost no food is given for a few days it will greatly assist in the cure. Another reason why the recumbent position should be insisted upon is that the rectum and sigmoid are drained by the middle and superior hemorrhoidal veins which have no valves and go direct to the liver through the portal system, and when the patient is standing the weight of this entire column of blood has to be lifted by the heart while, if he is lying down, gravity will greatly

assist in keeping the parts free from excessive congestion.

In the acute form it is not common to have any extension to the sigmoid and for this reason any injection used need not be forced above the rectal pouch. A double current rectal irrigator should be used or if this is not at hand an ordinary soft rubber catheter may be introduced with the syringe nozzle for the return flow. By shutting off the out-flow tube the rectal pouch may be filled to its fullest capacity.

The remedy that has given me the greatest satisfaction is Fl. Hydrastis in 25 per cent solution. Weak solutions of zinc and copper are useful, as are also the new preparations of silver, especially Argylol in from 5 to 10 per cent solution. Nitrate of silver should not be used in acute proctitis except in very weak solution.

In order to control the constant desire to empty the bowel some local opiate is needed and nothing acts better than two or three ounces of starch water to which has been added from 10 to 20 drops of Tr. Opii. to be repeated as found necessary.

Specific proctitis is not often seen and is generally due to gonorrhoea. The line of treatment should

be the same as that followed in treating the disease in other localities. Irrigations with large hot permanganate solution from 3 to 5 per cent in the early stages and later one or two ounces of Argyrol solution, injected into the bowel twice daily and retained.

In the later stages of the disease more strongly astringent remedies should be used, and a good one is a mixture of Zinc Sulph., Bismuth Carbonate, Fl. Hydrastis, and water.

In treating the chronic form of the disease we meet with a more difficult problem, as the sigmoid and often the descending colon are affected and irrigations must be forced beyond the rectal pouch. Most writers on this subject advise the use of the long rectal tube, but I have found from experience that it is exceedingly difficult to introduce this instrument into the descending colon. I have used the utmost care in trying to do this and have congratulated myself that the tube was in almost its full length only to find that it was coiled in the rectum.

My plan for irrigating the descending colon is as follows: Have the patient lie on his back with the hips well elevated. Have the water very hot and

the irrigator not more than two feet above the table. Use a short nozzle, not more than three inches long. Let the water run very slowly and if the patient says that he cannot hold it, stop the flow until the desire for an evacuation passes away and then start it again. It is only the first few ounces that cause a desire for an evacuation and as soon as the water begins to flow into the sigmoid this will not be felt, as a rule.

If the sphincter is very lax, push the syringe nozzle through a small roller bandage and into the bowel and sufficient pressure can be made against the sphincter to prevent the discharge of the water. By using a double flow nozzle and compressing the outflow tube at intervals, the colon may be flushed with sterile water or salt solution after which such medicated solutions as may be thought best may be run into the bowel and some of it allowed to remain.

This should not be done more than two or three times a week at first and later not more often than once a week. In case there is much blood in the discharge, a solution of silver nitrate seems to do more good than any other remedy. It should not be stronger than 1-2 of 1 per cent at first and may gradually be brought up to 2 or 3 per cent. It

should not be used more often than once a week and if it causes much pain it may be followed by the normal salt solution, but this should never precede the silver. Argyrol in 5 to 10 per cent solution may be used with good results.

In case amebic dysentery is present the solution should be used cold as the ameba cannot live in a low temperature. Tuttle claims to have cured several cases with ice water. A line of treatment which consists mainly in giving large doses of Epsom salts has proven very successful, mainly by keeping the colon clear of irritating material. The constant cathartic action of the drug is very depressing to the general health and really accomplishes no more than irrigation with salt solution.

Great care should be taken with the diet and only the most concentrated and nutritious food given. Tea, coffee, and all alcoholic drinks should be prohibited. The treatment in the chronic form of the disease is necessarily tedious and requires considerable time but if carried out faithfully will generally result in a cure.

Should it be impossible to bring about a cure by the methods outlined a colostomy may be resorted to, and, by diverting the fecal current, give the bowel

complete rest, or an opening may be made in the cecum and by means of a catheter the treatment may be carried on both from above and below as recommended by Gibson.

CHAPTER XIII.

NON-MALIGNANT STRICTURE

Stricture rare—Occur more often in women than men—
Causes—Spasmodic Stricture—Pressure from without—
Tubercular Stricture—Traumatic Stricture—Venereal
Stricture—Symptoms and Diagnosis—Malignant Stric-
ture—Treatment—Electrolysis—Instruments—Method of
Procedure.

Stricture is a comparatively rare disease and yet it occurs more often than it is supposed to because the physician in general practice does not recognize it and treats the patient for constipation, which is one of its symptoms.

It occurs more often in women than men and is most common between the ages of twenty and fifty.

There are two general classes of stricture, the *congenital and acquired*. The former will be considered in the chapter on congenital malformations. I will discuss briefly some of the causes of stricture, as in this way a better understanding may be had of the treatment.

Spasmodic Stricture. Whether it is possible for involuntary muscular fibre to spasmodically contract so as to cause a narrowing of the calibre of the bowel has not been fully decided. I am of the opinion that this may occur as a result of some irritation such as an irritable ulcer or some reflex action from the genito-urinary organs such as might be caused by a stone in the bladder, but that it could occur without some such cause I do not believe.

Mr. Harrison Cripps says that any irritation which causes a continual shortening of muscular fibre might in time cause the muscle to become permanently shortened and thus cause a stricture. In urethral disease it is often found nearly impossible to pass a sound because of the spasmodic contraction in front of the instrument.

If the canal is perfectly healthy this does not occur as a rule. The same thing may take place in the bowel. A patient with an irritable ulcer may find that when he undertakes to have a bowel movement the sphincter muscle will contract in spite of all that he can do and a temporary spasmodic stricture is the result. The above, it seems to me, is the true explanation of spasmodic stricture and while it does

exist it is not a true stricture but only a temporary contraction due to reflex irritation.

Pressure From Without. This is not strictly speaking a stricture at all but is a narrowing of the bowel because of the pressure of some tumor or adhesive band on the outside. Probably the most common cause of obstruction is a badly retroverted uterus. Any large tumor in the pelvis may cause sufficient pressure to produce a partial or complete closure of the bowel. A large pelvic abscess in females may do the same thing and the bands and adhesions that may occur as a result of such abscess or from operations in the pelvis may produce the same condition of affairs.

Tubercular Stricture. This is quite rare and is probably the result of a cocatricial contraction due to the healing of a tubercular ulceration. There is no way that I know of whereby sufficient tubercular deposit could be lodged in the rectal pouch to cause a stricture, because it is the tendency of this kind of deposit to break down rather than to build up and before a sufficient quantity could be lodged in the bowel wall to cause a stricture, it would break down and cause a tubercular or so-called cold abscess.

Traumatic Stricture. This really includes the in-

flammatory form the disease and is the cause of more strictures than any other single thing. That an injury of the lower end of the bowel could unaided cause a stricture, I very much doubt, but when we consider that these injuries are followed by a

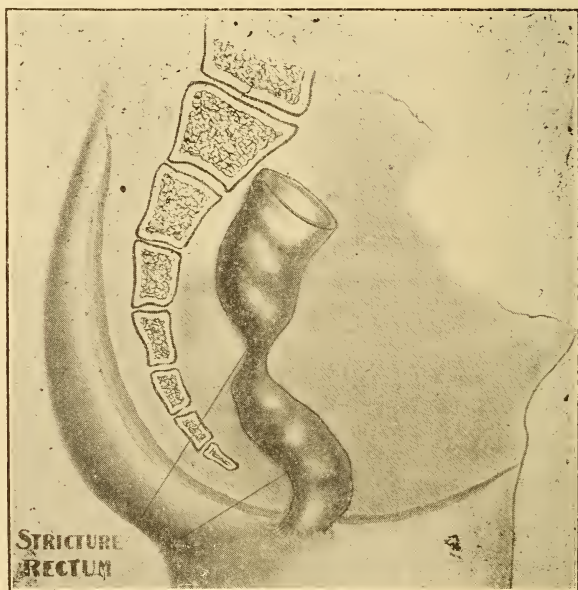


Fig. 57. Annular stricture.

long inflammatory process with much destruction of tissue and cicatricial contraction, it is easy to see how it may entirely occlude the calibre of the bowel.

Any traumatism that sets up a proctitis may

cause stricture, among which may be mentioned surgical operations, impacted feces, the introduction of foreign bodies, as is sometimes done by the insane, pressure by the child's head in labor, enemata of too strong caustics, as the injection by mistake of pure carbolic acid or concentrated solutions of corrosive sublimate. Stricture due to the too free use of the cautery at the junction of the skin and mucous membrane is not uncommon and I have seen almost complete occlusion of the bowel from this cause. This is a stricture of the anus and not of the rectum.

Venereal Stricture. This is in my opinion limited almost entirely to syphilis in its late stages. It is said to be caused by gonorrhoea and chancroids, but this is, I feel sure, a mistake. I do not wish to discuss the matter here, but will only say that I never saw a case due to either of these causes in my own practice.

As the years go by I am coming to believe more and more that our past opinions in regard to syphilis causing rectal stricture are wrong. That it does do so, there is no doubt, but not to the extent believed by some. Allingham says that out of one hundred patients who had rectal stricture, a history of syphilis was traced in fifty-two or more than half.

While this may be true, I believe that some of the fifty-two would have had stricture from other causes regardless of the syphilis. The fact that they had both at the same time was a mere coincidence. I believe that to say twenty-five per cent of all strictures of the rectum are due to syphilis, is more nearly correct.

Stricture is caused by syphilis mainly by a gummatous deposit in the submucous tissue and as a rule is deposited equally around the entire wall of the bowel.

It may in this way be distinguished from cancer as the latter generally affects the bowel wall unevenly and projects more in some places than others. Another diagnostic point is the fact that if left untreated it kills in from three to four years, while syphilis may last indefinitely.

Symptoms and Diagnosis. Generally the first thing complained of is the ulceration which precedes the stricture but in case there has been no ulceration, about the first thing complained of will be constipation alternating with diarrhoea. The reason that these symptoms occur is that the fecal matter gathers above the strictured portion of the bowel and accumulates there until by its irritating action

it sets up a mild inflammation and an acute diarrhoea is the result.

After this the patient goes along very nicely for awhile but gradually becoming more and more constipated and all the while increasing the amount of cathartic medicine that he takes until nature again starts the diarrhoea. These attacks are repeated at infrequent intervals until the stenosis becomes so great that he seeks surgical aid.

In some cases, because of the irritation above the stricture, an abscess will form and burrow to the surface somewhere on the buttocks, leaving a complete fistula through which the feces are nearly all discharged. Patients have been known to live for a long time with no other opening than this fistulous track through which the contents of the bowel could be passed.

On the other hand fistulous channels may form below the stricture. This is caused by the deposit of fibrous or gummatous matter in the bowel wall, which shuts off the blood supply to the parts below, resulting in local circumscribed death of the parts in small areas causing a breaking down of tissue and an abscess and fistula results. For reasons just

stated, when a patient is seen with a fistula the bowel should always be examined for stricture.

Probably seventy-five per cent of all strictures of the rectum are within reach of the finger and the diagnosis can easily be made in this way. If the well oiled finger encounters an obstruction which it cannot easily pass, but having a small opening in the center, it is a stricture of some sort. The finger may be gently passed through the opening in many cases and in this way the extent of the strictured portion may be ascertained and whether the obstruction is in the bowel wall or from some pressure on the outside.

In case the stricture is beyond the reach of the finger, the proctoscope should be used.

No one, regardless of how expert he is, should base a diagnosis of stricture of the rectum on the inability to pass a bougie. It has been proven beyond question that a bougie will catch on the promontory of the sacrum or in the folds of mucous membrane in the hollow of the sacrum. The proctoscope will in nearly every case reveal the exact location of the stricture unless it is above the sigmoid, in which case an exploratory operation should be done.

If the stricture is not complete and can be seen plainly through the proctoscope, an olive tipped whalebone bougie may be carefully passed through the opening to ascertain its extent. Great care should be used to not puncture the bowel.

In order to distinguish between benign and malignant stricture, the following table taken from Ball is very interesting:

NON-MALIGNANT STRICTURE.

- 1st. Generally a disease of adult life.
- 2nd. Essentially chronic and not implicating the system for a long time.
- 3rd. The orifice of the stricture feels like a hard ridge in the tissues of the bowel. Polypoid growths, if present, are felt to be attached to the mucous membrane.
- 4th. Ulceration of the mucous membrane may be present, but without any great induration of the edges.
- 5th. The entire circumference of the bowel is constricted unless the stricture is valvular.
- 6th. Pain, throughout the whole course, in direct proportion to the fecal obstruction and complained of only during defecation.
- 7th. Glands not involved.

MALIGNANT STRICTURE.

- 1st. Generally a disease of old age.
 - 2nd. Progress comparatively rapid and general cachexia soon produced.
 - 3rd. Masses of new growth are to be felt either as flat plates beneath the mucous membrane and the muscular tunic, or as distinct tumors encroaching on the lumen of the bowel.
 - 4th. Ulceration, when present, is evidently the result of the breaking down of the neoplasm; the edges are much thickened and infiltrated.
 - 5th. Generally one portion of the circumference is more obviously involved.
 - 6th. In the advanced stages pain is frequently referred to the sensory distribution of some of the branches of the sacral plexus, due to the direct implication of their trunks.
 - 7th. The sacral lymphatic glands can sometimes be felt through the rectum, enlarged and hard.
- Treatment.* Much may be done in the way of palliation, should an operation be refused or for any reason be thought not best. This consists mainly in keeping the bowel contents in as near a fluid condition as possible. Strong cathartics should never be given, but laxatives are indicated. These should

be varied to meet the indications of the case. The different mineral waters, compound licorice powder, malt with cascara, etc., are all useful. Pure olive oil with about one-third glycerin added, while not greatly laxative, will, if given for some time, have a most excellent effect.

Injections of water or oil do much good. The diet should be carefully regulated and the patient kept on milk, soup, soft boiled eggs and such things as leave but little residue to be passed away.

In order to bring about a cure, more radical measures must be used. The easiest method for the



Fig. 58. Wales rectal bougie.

physician in general practice, is gradual dilation with Wales rubber bougies. I believe that it is nearly if not quite impossible to bring about a complete cure in this way, but with persistence and with a short period of treatment, occasionally, all through life many patients may be kept in pretty comfortable condition. This, combined with incision, is safe and will cure many cases, besides not requiring chloroform. Always use a bougie as large as will

pass without pain or requiring the use of force. No good can be accomplished by pushing a large instrument through a stricture and it is liable to cause a rupture of the bowel and peritonitis.

Having found the instrument that will pass easily the patient should be taught how to use it and instructed to pass it through the stricture at bed time and leave it there for an hour or more. At the end of a week a larger size may be tried and if it passes easily it should be used for a week when a still larger one may be used. Should the sphincter become irritated from the passing of the instrument so often, it will have to be stopped for a while. Still it does no good to begin this treatment unless it can be continued for a long time and with persistence and vigor.

Some object to allowing the patient to pass the bougie, because they might do themselves an injury. I am satisfied that a patient of ordinary intelligence may be taught to do this without danger. It is nearly impossible for them to come to the doctor's office every day and even if they did, he could not spare the necessary time. The stricture dilates much the same as a rubber band would do and for awhile will return to its original size as soon as the instrument

is taken out, but if kept stretched more or less constantly for a long time, absorption will take place and it will be of larger size than formerly.

This may be combined with incision or internal

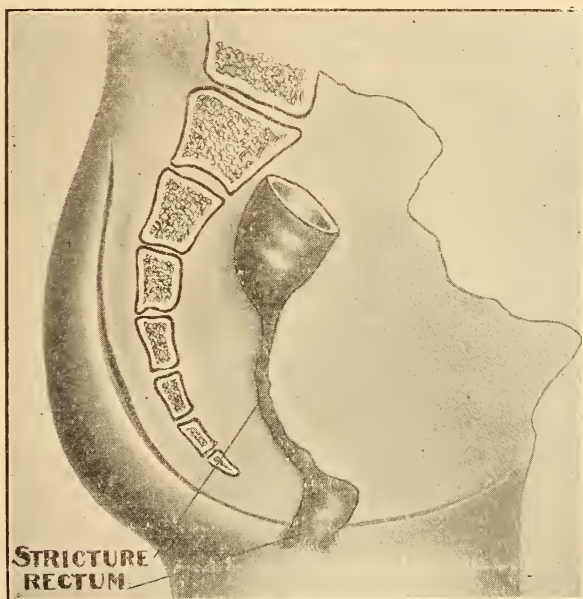


Fig. 59. Tubular stricture.

proctotomy if the stricture does not extend too high and involve too much of the bowel. This is done by dilating the sphincter through a speculum and cutting the stricture in one or more places down to

the bowel wall, being careful to not cut too deep. This accomplishes at once what gradual dilatation would require months to bring about. It should be followed by constant dilatation so the cut surface will not unite and leave the stricture in the same condition it was before.

The worst objection to this method is the poor drainage and unless great care is used the rectal cavity will become filled with pus and a proctitis and possibly an abscess will result. But if plenty of water with mild antiseptics are used, there need be no fear of this.

In order to get good drainage, external proctotomy is done in some cases. This consists in cutting all the tissues from the upper margin of the stricture to the coccyx. This makes a broad gutter-like wound that allows for drainage and free discharge of all bowel contents. It must fill in by granulation which takes a long time, but the results are generally good.

In case there is any reason to suspect syphilis large doses of iodide of potassium should be given and kept up for a long time, alternated with such other anti-syphilitic remedies as may be thought

best. This will not remove the stricture but will prevent its further development.

There is a remedy called thiosiamin, which is said to have the power of removing scar tissue from any portion of the body. Recently several cases of stricture of the pylorus, urethra, and rectum have been reported cured by this means. I have not had a chance to test it but shall do so at the first opportunity. A fifteen per cent alcoholic solution used hypodermically is the best. Begin with about eight drops at a dose and gradually increase to sixteen. It is not best to use the injection more than twice a week. It need not be injected at the site of the stricture, but may be used on any part of the body. It will probably do as well to give it by the mouth, but it is said to be somewhat irritating to the stomach.

Treatment by Electrolysis. As we come to know more about the use of electricity, the profession is learning that the negative galvanic current will cure non-malignant stricture if properly used, in well selected cases and combined with such other measures as may be indicated. We are indebted to Newman for pioneer work along this line and the technique taught by him is that followed by most operators. The following is from his writing as found

in the International System of Electro-Therapeutics :

Instruments. The armamentarium consists of a good galvanic battery with conducting cords, handles with sponge electrodes, a few binding screws, a set of rectal electrodes of different size and shape, and a milliamperemeter to measure the electric current.

The electrodes have at one end a metal bulb, copper, brass, silver or nickel plated. The form is flat or egg-shaped ; they are made in sets of different sizes ; the length is from one-fourth inch to one and one-fourth inches, and the circumference from one and an eighth to three inches.

The stem of the electrode, except at the extremities, is insulated with hard or soft rubber ; some are flexible, others stiff . If larger sizes are needed, a metallic bulb is used, similar in size and shape to vaginal electrodes, which are from three to five inches in circumference. Recently, Waite and Bartlett have made for the author an electrode for examination and treatment which is superior to all former instruments. It consists of a bulb on a spiral stem, insulated with a rubber covering. The instrument will accommodate itself to the flexures and easily enter the colon, thereby increasing the

field of observation. Undue force is prevented; neither can the tube double or turn on itself. If made long enough it will enter the transverse colon.

Modus Operandi. The patient may be placed in the Sims position, on the left side; but in the majority of cases the Lithotomy position, on the back is preferable, because in the examination and operation the anatomical relations of the rectum and colon with the sigmoid flexure can be better appreciated. The galvanic battery is brought into action with the switch at zero. The sponge electrode, wet with warm water, and connected with the positive pole of the battery, is placed firmly in the palm of the patient's hand, but in some cases may be pressed on the abdomen or thigh.

The negative metal-electrode is lubricated with glycerin and inserted per anum to the seat of the stricture, and only then the electric current is slowly increased from zero, cell by cell, until the desired strength is reached, which is ascertained mainly by the sensation of the patient.

The strength of the current allowable varies from 5 to 15 or even 20 milliamperes, according to the seat of the stricture, the nature of the neoplasm, the size of the electrode, and the susceptibility of the

patient; the rule always being not to use a strong current if a weak one will accomplish the object.

The treatment may last from five to fifteen minutes. No force should be used; the electrode should be kept steadily against the stricture, and only guided; the electrolysis does the work of enlarging the calibre as the instrument passes the obstruction. At the end of the treatment the current is reduced slowly to zero, and not until then is the electrode to be removed.

The treatment may be repeated in one or two weeks. According to circumstances and complications of the disease, some modifications of the treatment may be called for, one of which is the use of needles in the mass of the stricture, instead of the metal bulb, at the negative pole. The smaller electrodes are very flexible and long, the object being that undue force is impossible while being used. Some operators use stronger currents, particularly if anaesthetics are used."

CHAPTER XIV.

WOUNDS AND OTHER INJURIES

Common Wounds and Injuries—Causes—Fecal Impaction—
Accidents—Danger of Injury—Treatment—Foreign
bodies.

The injuries most often met with here are incised, lacerated, punctured and contused wounds, both of the bowel itself and the surrounding parts. These may occur in various ways, but the most common cause is contusions from falling on hard objects as stones, the edge of seats, etc. Should the object fallen upon be sharp, there may be a punctured wound. There may also be an injury from foreign bodies too long retained or from pushing a bougie or other instrument through the bowel wall or the rough use of the finger in examining the parts.

As stated in another place, Kelly reports five cases where the bowel wall was perforated in using

too great force with the finger. This is more likely to occur in old people whose tissues are weak and easily torn. Several cases have been reported of puncture of the bowel wall, and injection into the peritoneal cavity of a pint or more of water or soap suds.

There are many injuries to these parts in war, due to gun shot wounds, bayonet and sabre thrusts, etc. One of the most common causes of injury is from fecal impaction and foreign bodies. The former is apt to cause tears and abrasions from straining, and the use of instruments in its removal and the latter from the same cause with the added danger of cuts from sharp edges or the breaking of glass, such as small bottles.

Another class of wounds are those caused accidentally while operating on other organs, as prostate or bladder. The bowel has been perforated by the old-fashioned stiff bougie in trying to dilate a stricture. As this instrument is now seldom used these injuries are not found.

Wounds that perforate the bowel wall are exceedingly serious if the opening is above the peritoneum because it allows fecal matter to pass into the peritoneal cavity and peritonitis and death are

the usual result. If the opening is below the reflection of the peritoneum, it will not be so serious, but an abscess will result. There is apt to be infiltration of the surrounding tissue, severe bleeding and extensive suppuration.

The gravity of these injuries is the danger of peritonitis and the fact that there is such poor drainage to allow the products of suppuration to escape.

In case the injury is confined to the internal parts and nothing shows from the outside, the real gravity may not be appreciated and the delay occasioned may cause the loss of the patient's life. Severe hemorrhage may go on with no escape of blood on the outside as it will pass into the upper part of the bowel and fill the entire large intestine. This condition will soon bring on collapse and all the symptoms of shock.

Examination by the finger will generally show the extent of the injury and in case it does not, an anaesthetic should be given and the sphincter dilated until all the parts can be easily seen. Preparation should be made at the same time to operate if necessary.

TREATMENT.

In treating these wounds as before stated we

must make some provision for drainage. If there is hemorrhage going on which cannot be otherwise controlled the rectal cavity should be first thoroughly washed out with hot water and then packed with gauze until the flow of blood stops.

Of course if there is a tear in the bowel wall above the peritoneum the abdomen should be opened at once and the rupture closed from the peritoneal side. If this is not done the water used to wash out the bowel as well as the blood will at once pass into the peritoneal cavity. If the bowel contents have already escaped into the abdominal cavity, it should be wiped out with sterile gauze and then with alcohol.

Nature will take care of a good deal of foreign matter and where no pus is present it is best to not flush the abdomen. In case the wound is below the peritoneum, the abdomen need not be opened, but if there is a rupture of any importance through the bowel wall the sphincter should be divulsed or if need be cut and the opening closed. It is much better to divide the muscle posteriorly and thus get the wound in good condition and where it can be seen and properly treated than to allow it to get into the foul condition that sometimes occurs.

In dividing the muscle as suggested, we do not

cut many of the muscular fibres, as they do not cross each other to a great extent, but pass directly back to their insertion into the coccyx. Nature will soon restore the divided parts to their former condition. The wound should be flushed daily with mild antiseptic solutions and the patient kept quiet and not allowed to get out of bed until nearly all inflammatory symptoms have passed away.

In case a foreign body has lodged in the rectal cavity it often requires a great deal of ingenuity to remove it. As a rule, it is pushed in the easiest way and as soon as it passes the sphincter muscle the latter contracts behind it and every effort made to remove it only seems to push it farther in. Should it be glass, there is the added danger that it may break and lacerate the parts. If it is wood, it may be grasped with a pair of strong bone forceps and carefully removed. In some cases it may be of such a nature as to allow it to be cut to pieces and removed piece-meal. Rather than run the risk of mutilating the parts too much, the muscle had best be divided, which will allow the foreign body to be removed.

In case it has passed into the sigmoid, an abdominal section should be done at once and it may be

removed through this opening or pushed back and removed without opening the bowel.

CHAPTER XV.

PRURITUS ANI OR ITCHING OF THE ANAL REGION

Most intractable disease—Terminal Nerve Filaments—The only relief—Removing the Cause—Pruritis—Dr. Bull's statement—Intense Itching—Chronic Conditions—Delayed treatment—A prevailing cause—Unnatural Discharge of Moisture—The necessity of great care in Examinations—Causes of the Irritation—The Author's Conclusion—A small shallow Ulcer—Wallis' Conclusion—The Examination—The Discharge from small Ulcers—Symptoms—Treatment.

This is the most intractable disease that the rectal surgeon is called upon to treat. It is often spoken of as a trivial matter, yet I have had patients who were almost physical wrecks, due to the loss of sleep, worry and nervous irritation. I believe that in its early stages it always has some well defined cause which, if searched for and removed, will cure the disease. A little later, however, the terminal nerve filaments become affected, and even though the cause be removed, or has long since passed away, the itching will still remain.

The skin becomes thickened and parchment like

and the nerve endings seem to be pressed upon and constantly irritated. In these cases nothing will give permanent relief except the destruction of this altered tissue and the formation of new skin. There are several ways of doing this, all differing in methods, but aiming at the same end, of course if there is any cause that is keeping up the irritation, it should be removed. It would be very unwise to try to cure a pruritis due to eczema, pin-worms, fistula, hemorrhoids, rectal catarrh, ulceration, etc., without first removing these.

Dr. Bulls, writing in the British Medical Journal, says, "At a recent meeting of the British Medical Association at Oxford, an interesting discussion took place, in the section on dermatology, on the causation and treatment of pruritis ani; anyone reading that debate cannot fail to be impressed with the numerous numbers of distinct diseased conditions to which this annoying symptom was attributed by the various speakers, and large as the number of supposed causes assigned were, the various plans of treatment advocated were still greater."

This disease is characterized by the most intense itching, which is worse when the patient gets into a warm bed. Patients have told me that pain would

be a relief and would be willingly borne in preference to the pruritus. Many patients do not consult the doctor until the disease has become chronic and it is then most difficult to tell what may have been the cause as the symptoms may remain, even after the cause has long since passed away.

They will usually try all sorts of remedies before consulting a physician and when they finally do, the relief is often so transient and unsatisfactory that they drift from one to another with but little benefit from any treatment advised. They are likely to think that but little interest is taken in their case and go from bad to worse until by the time they get into the hands of a rectal specialist they are often in a serious condition.

In my opinion the disease is caused in the great majority of instances by an unnatural discharge of moisture about the parts; this may be brought about in various ways and by so many different conditions that a most careful search should be made to determine its source before any treatment is begun.

As before stated, in chronic cases the cause may have disappeared, or if present, its removal may not end the trouble as the skin has become so thickened and thrown into folds that only its destruction or

removal will effect a cure. The irritation that causes the catarrhal discharge may be internal or external hemorrhoids, chronic proctitis, ulceration, fistulas, especially the small submucous variety with no external opening, pin-worms, hard dry feces which irritate the parts, the lodging of irritating matter in the so-called rectal pockets, the growth of small polyps or in fact anything that will cause an irritation.

Some of the patients who come for treatment are afflicted for the first time and the cause may be some error of diet, excessive smoking, or drinking, and but little treatment is necessary to effect its removal. After many years of study of this disease I have arrived at about the same conclusion as Wallis of London who attributes it to a small shallow ulcer just between the sphincters. He says: "In over ninety per cent of the cases so examined the shallow ulcer mentioned was found situated, usually between the two sphincters, more often in the posterior half than in the anterior, and generally in the dorsal mid-line; in some cases there is more than one ulcer, and, again in others there are various clefts which occasionally almost surround the bowel. This ulcer is not easy to recognize by the touch, and it re-

quires a certain amount of practice to appreciate its presence. In the first place, it must be remembered that it is only just within the anal margin, and always below the internal sphincter. The smooth feeling of the healthy lining membrane will be recognized, but when the finger touches this abraded or ulcerated surface the smooth feeling disappears, and a slightly raised margin can be felt around the rough surface. There is sometimes pain, but more often none, associated with the examination.

When the speculum is introduced, it must be remembered that the tissues are pushed in, some little way by the instrument, and therefore the ulcer will appear higher up than it really is. If after its introduction the speculum is opened to its fullest extent, the inexperienced observer will probably not recognize the ulcer; but if the speculum is only slightly opened and, when possible, a careful view with a headlight is obtained, the ulcer can be clearly seen as a shallow oval, livid abrasion, differing markedly, and mainly in color from the normal mucous membrane. Here, then, is a definite lesion, in a so far indefinite disease, and it seems reasonable to believe that it might be the cause of the irritation."

I have spoken of this little ulcer in former edi-

tions of this work and further experience only confirms my opinion of its importance. It should be understood, however, that it is not the ulcer itself that itches but it is the discharge flowing over the parts that causes the trouble. The skin becomes thickened and infiltrated, and loses its vitality. The nerve endings are compressed by the pressure made on them causing an irritation, and itching is the result.

SYMPTOMS AND DIAGNOSIS.

These are so evident that the patient will have arrived at a diagnosis before consulting the Doctor. He will probably say that he has "itching piles," as he is unable to recognize the cause of the trouble. His whole thought is how to get rid of the intolerable itching which is simply wearing his life out.

Upon examination the first thing that will be noticed is that the skin about the anal margin is thrown into folds or ridges and that it looks unnaturally sodden and dead; also in most cases there will be seen an unusual amount of moisture coming from the bowel above. This roughness and moisture are often the lurking place for dirt and lint from the clothing which collects here, and irritates the parts: even those of cleanly habits are unable to avoid this.

An eczema is generally present, often extending over a large area and the marks of finger nails may be seen showing the results of scratching. This chronic eczema is very hard to heal and does not respond to the ordinary remedies used for this disease.

Careful search should be made for some of the conditions mentioned above in order to arrive at some conclusion as to the cause of the trouble. This should in all circumstances be removed, although, as before stated, it may not cure the disease.

Treatment. The most important thing is to find the exciting cause and remove it, which in recent cases will effect a cure. If the skin has become thickened and rough, some method must be adopted to bring it back to as near its normal condition as possible. In some cases this seems to be beyond the reach of drugs and only to be accomplished by the destruction or removal of the skin. A plan that has given me good results is the application of a ninety-five per cent solution of carbolic acid to the affected skin. I sometimes use a saturated solution of silver nitrate instead of the acid, as suggested by Adler. The epidermis peels off in a few days, leaving a somewhat tender surface that should be treated with

soothing ointments, such as the ointment of zinc oxide.

After an interval of two or three weeks the acid should be put on again. This may have to be put on several times before the skin becomes natural. Sometimes there are large warty ridges almost resembling piles. I never waste time with these, but simply cut them off and let the space fill in by granulation. The intervening and all surrounding tissue is treated with the acid.

This seems like rough treatment and so it is, but it should not be forgotten that we are dealing with a most stubborn disease, and decisive measures must be adopted to bring about a cure. Some patients object, but the majority are willing to submit to anything that promises relief. After all it is not so painful, as the acid acts as a local anaesthetic, and while it burns somewhat, it is a comfort, as it stops the terrible itching.

The following case illustrates the benefits of this method of treatment.

Mr. W., age forty, treasurer of an eastern Iowa county, and a man of more than ordinary intelligence, came to my office complaining of pruritus that was simply making life unbearable. The dis-

ease had troubled him for a long time, but was much worse at present than ever before.

Examination showed the skin to be thick, parch-ment-like, and lifeless, with several heavy folds that radiated from the anal aperture. I explained to him that as he could not remain for treatment, anything that I did must necessarily be pretty severe; also that it would have to be kept up at home for a long time. He replied that he "did not care what I put on, as it would be a relief to what he was now suffering." I cut off all the redundant tissue and applied acid to the surrounding skin. I gave him the zinc oxide ointment to use until the soreness had left, and told him to have his wife apply the acid and to keep it up as long as seemed necessary. I also gave him the following injection:

Dist. Ext. Hamamelis.....10 dr.

Monsel's Solution 2 dr.

Phenol Sodique 6 dr.

Glycerin 4 dr.

Mix. Sig. Inject one-half teaspoonful in starch water at bedtime.

He was warned against scratching, and told to forego all alcoholic drinks, excessive use of tobacco, rich meats, highly seasoned food, etc. He continued

this treatment for a long time and was rewarded with a complete cure. After six years there has been no return of the disease.

In cases that are caused by a vegetable parasite I have made use of pure sulphurous acid with good results. It is generally used in solution, but I have found that it is better to use it full strength. It is quite painful, but one application is all that need be made, as it will destroy any living parasite that may be present.

The application of very hot water followed by citrine ointment applied freely on gauze over which is tightly bound a pad that makes considerable pressure will often give relief so that the sufferer may obtain a good night's rest.

In fact the citrine ointment is the best single agent with which I am familiar to bring about a permanent cure. When used persistently for a long time it will in many instances bring about permanent relief.

It is said that French surgeons use a sharp curette and scrape away all of the diseased skin, thus bringing about the same condition that we do by removing it surgically and bringing the edges to-

gether with sutures. The carbolic acid does the same thing only in a slower manner.

Gelsey uses the white hot cautery, passing it lightly over all the affected parts. This, of course, is only another method of destroying the superficial layer of skin and allowing healthy tissue to take its place. It matters not what may have been the original cause of the disease or how long since this cause may have passed away, there comes a time when the terminal nerve filaments are bound down by the deposit of fibrous matter produced by the irritation of scratching, and nothing short of its complete destruction or removal will bring about a cure.

As before stated, I believe that most of these cases originate from a catarrhal condition of the bowel and that if seen early enough, treatment directed to this condition, if carefully carried out, would cure the pruritus. Tuttle says, "Catarrhal disease of the rectum and anus are among the most frequent causes: whether it be the atrophic or the hypertrophic form, pruritus is one of the commonest symptoms.

The dry, brittle condition of the muco-cutaneous membrane about the anus, described as a symptom of pruritus ani, is nothing more or less than a part

of the atrophic catarrh of the rectum and anus: and that moist, sodden, whitish condition seen in chronic cases is the result of the hypertrophic type."

It is well known by all who do rectal surgery that after hemorrhoid operations or any condition where there is a wound that discharges pus as it heals, there is a constant pruritus on all the surrounding tissue, owing to its being constantly irritated by the discharge.

Other causes that should be searched for, are constitutional diseases, especially diabetes, rheumatism, gout and all the conditions that go under the name of uricemia. There seems to be an irritant in the blood that causes cracks and fissures at all the mucocutaneous junctions and pruritus ani and vulvi which are very troublesome.

These people are generally affected with eczema and the skin seems dry and scaly, specially about the scrotum on the breast and about the ears and hair.

Certain errors of digestion as well as certain articles of food may start an attack of pruritus. Coffee has seemed to me to be more harmful than any other article of diet and will alone produce the disease in certain persons. All of these things should be searched for and, if found, given careful atten-

tion. I absolutely refuse to treat a person who is in the habit of drinking any form of alcohol.

As a rule the treatment must be long and tedious and unless the patient will make every effort to assist in bringing about a cure I refuse to treat him.

There are many formulas that are used with more or less success, a few of which are here given. Tuttle speaks highly of the following:

Ac. carbolicæ 2 dr.

Ac. salicylicæ 1 dr.

Glycerin 1 dr.

Mix. Sig. Apply with camel's hair brush after bathing with hot water.

Matthews recommends:

Campho-phenique 1 dr.

Glycerin 1 oz.

Mix. Sig. Apply after using hot water and repeat frequently if necessary.

In cases where there are fissure-like cracks at the junction of the skin and mucous membrane, Cripps recommends the following:

Ext. conii 1 dr.

Oil ricini 1 dr.

Lanolini 1 dr.

Mix. Sig. Apply frequently.

An ointment of chloroform as follows acts nicely in many cases :

Chloroform 1 dr.

Ungt. petrolati 1 oz.

Mix. Six. Apply frequently.

This must be put up in a wide topped bottle and kept tightly corked, as otherwise the chloroform will soon evaporate.

Where the parts are too moist the treatment is often assisted by the use of powders that will absorb the moisture. Plain starch has given good results in many cases. Dry calomel many times is very useful. The following has given good results :

Camphor 2 dr.

Ac. corbol 15 gtt.

Crete Precip. (Eng.) 2 oz.

Zinc oxide pulv. 2 dr.

Perfume q. s.

Mix. Reduce the camphor with alcohol and mix the others through bolting cloth of one hundred meshes to the inch.

I have operated under chloroform three times by removing a section of the skin for about an inch on each side of the anus and then undermining the surrounding skin and drawing it together to cover the

denuded surface and stitched it to the mucous membrane of the bowel.

In two cases I secured good results and the other was lost sight of. This procedure was suggested to me by my friend, Dr. Hamilton, of this city, and as a means of last resort I believe it to be very valuable. I intend to make further use of it as opportunity arises.

Patients should always be told not to scratch the parts, although this warning is seldom heeded. If the itching is so severe as to interfere with sleep, have them use hot water, gradually increasing the temperature, until it is nearly scalding. In case this is not sufficient to give relief, an ointment of chloroform one dram, to one ounce of cosmoline, may be applied. A weak solution of carbolic acid in water and glycerin will often give relief when all else fails.

The following mixture is a most excellent one :

Sodium hyposulphate 1 oz.

Carbolic acid $\frac{1}{4}$ dr.

Glycerin 1 oz.

Aqua dest. 3 oz.

Mis. Sig. Apply frequently on compresses.

Also :

Cocaine $2\frac{1}{2}$ gr.

Ex. rhatany 15 gr.

Ext. hamamelis 7½ gr.

Cosmoline 5 dr.

Mix. Sig. Apply freely.

Dr. Buckley recommends the following, and I can testify to its merits:

Ungt. picis 3 dr.

Ungt. belladon 2 dr.

Tr. aconit rad. ½ dr.

Zinc oxide 1 dr.

Ungt. aqua rosa. 3 dr.

Mix. Sig. Apply freely.

I have cured several patients by injecting cocaine under a small portion of the skin where it is thickened and then cauterizing it with the actual cautery. After healing has taken place another area is treated in the same way. This makes the parts quite sore but not more than is bearable, and most patients are willing to put up with it if it is likely to cure them.

While the principal attention should be paid to the skin in order to get relief from the itching, yet measures should be taken to cure the catarrh in the bowel above. I have the patient wash out the bowel with solutions of boracic acid and then inject a twenty-five per cent mixture of colored fluid hydras-

tis (not fluid extract). Other antiseptic astringent solutions may be used such as would be beneficial in catarrhal conditions in other parts of the body.

Owing to the difficulty experienced in effecting a cure in some of the chronic cases that have come to me for treatment and being anxious to try anything that held out any hope of cure, I was led to try the Roentgen rays, and while my experience has not been great in the number of patients treated it has been so satisfactory that not only myself but my patients have been delighted with the result.

This method is only useful in old chronic cases where the skin is eczematous and thickened. Just what the action is that brings about a cure I will not attempt to say, but that the eczema disappears and the skin returns to its normal condition or nearly so is beyond question. It is too soon to say positively how permanent the results are going to be, but I think from the appearance of the skin that there will be no return if the bowel above is put in a healthy condition.

My technique is as follows—with a soft tube I give an exposure of ten minutes duration twice a week until I learn how the skin is going to stand it. If there is no irritation I give three treatments a

week until a brown discoloration appears. All treatment is then stopped until this goes away, when treatment is resumed until it reappears. This is usually enough, but if possible I think it is well to give an occasional treatment after this as a matter of precaution.

I know of no disease that will so tax the skill and ingenuity of the physician as this, and in all cases the patient should be made to understand that in order to be cured, he must be willing to do all in his power to aid the treatment. Many times the cure seems to be accomplished when a relapse will occur, which is very discouraging to both the patient and physician.

CHAPTER XVI.

CONGENITAL MALFORMATION

Small per cent of Malformations—Necessity of examining the Child at Birth—Simple Narrowing of the Calibre of the Bowel—Diagnosis—Treatment—When the opening is closed by Membrane—Treatment—Absence of Anus—When the Rectum and Anus are Separated—Hopeless Cases—Artificial Anus.

The physician in general practice does not often meet with malformations of the lower end of the bowel; many going through a long life-time of practice without seeing a case. It is said that there is only about one case of malformation in four thousand five hundred thirty-eight births. While this is a small proportion, no one knows when the next one will happen or who will have charge of the obstetrical case in which it occurs.

When a child is born it should be carefully examined to see whether or not it is physically perfect. If not, measures should be adopted as soon as possible to correct the malformation if it can be done with

any reasonable hope of success. If there is not a fair chance of correcting the deformity so that it will leave the child in nearly a natural condition, it had better be let alone.

I do not believe that under any conditions an artificial anus should be made except as a temporary expedient. The laity do not understand the gravity and seriousness of the matter or the terrible condition in which the child must pass, not only its childhood, but probably a long life. It had better be allowed to die in infancy, and, if the parents are sensible, and the matter is explained fully to them, they will agree that this is to be preferred.

There are, however, a few conditions that may be remedied without much difficulty and the child left in a nearly natural condition.

The first one is a simple narrowing of the natural calibre of the bowel without occlusion. This is nearly always overlooked and no doubt many go through life without its being discovered unless there is considerable narrowing of the bowel. It generally occurs in the annular form and nature will often overcome a great deal of it. The only symptoms in most cases will be obstinate constipation. If the stricture is quite tight it will produce all the symptoms of in-

testinal obstruction in other localities. It is not hard to diagnose, as the narrowing is always near the outside and may be felt by digital examination.

The treatment consists in gradual dilation, if there is enough opening to allow this to be done. If not, do an internal or external proctotomy as directed in the chapter on stricture.

The next form is where the opening is closed by a membrane stretched tightly across the anus. This is the simplest form of malformation and the easiest remedied and yet it will cause the death of the child unless attended to. Sometimes there is a very small opening at one side, sufficient to allow the discharge of meconium and liquid feces but when more solid substances attempt to pass, a complete obstruction occurs. The membrane will usually bulge outward so that the actual condition is easily recognized. The membrane should be cut in both directions across the center. The flaps left will shrivel up and disappear.

The next form is where there is an entire absence of the anus and the rectum ends in a blind pouch somewhere in the pelvis. In this case there is no way to tell just where the lower end of the bowel actually is. It may be very nearly in its normal position and

on the other hand, it may be a long way off, or it may end in the vagina or bladder.

It is useless to cut blindly into the place where the rectum ought to be, hoping by mere chance to

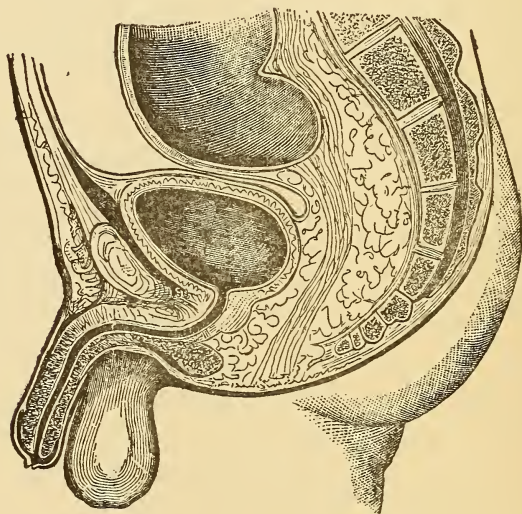


Fig. 60. Showing rectum ending in a blind pouch. (Kelsey).

find it. The better way is to make an opening in the abdomen at the proper site for an artificial anus, bring up the sigmoid and make a small puncture in it through which a catheter or large bougie may be passed. By pushing this carefully down into the lower portion of the sigmoid, if the lower end is any-

where near its proper place, it can be felt by pressure from the outside, and will serve as a guide upon which to cut and the bowel may be found and brought down and fastened in its proper place.

After it has been found and loosened so it will

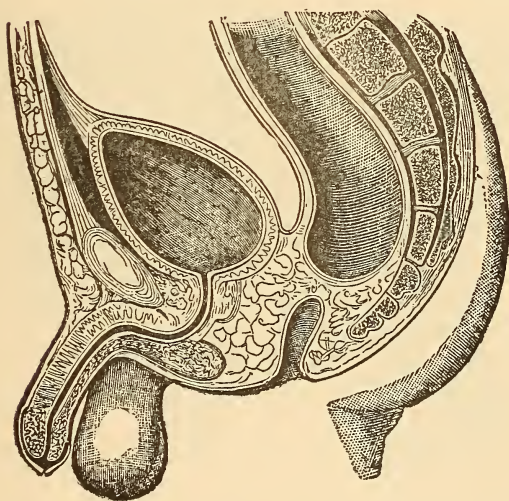


Fig. 61. Rectum ending in a blind pouch; anus normal.
(Kelsey).

come down properly it should be secured by a ligature and then drawn back through the abdominal wound so the opening in the bowel through which the bougie was passed may be closed. After this is done the lower end is carefully drawn down and

stitched in the perineum as near where the natural opening should be as possible.

In case the bougie does not locate the lower end of the bowel in a place where it may be drawn down properly, an artificial anus may be made at the site

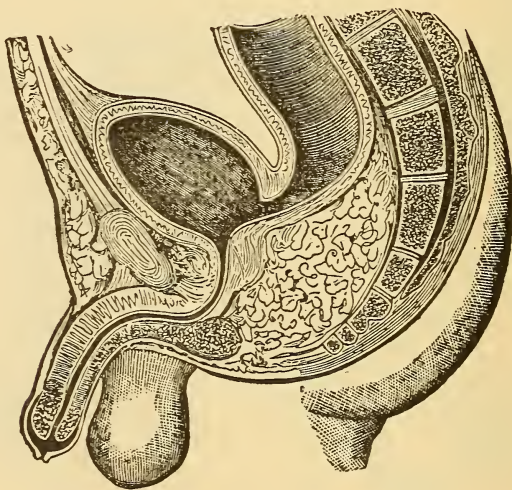


Fig. 62. Showing rectum ending in the bladder.
(Kelsey).

of the original incision provided the parents desire that this be done after having the matter fully explained to them.

The next form is where the rectum ends somewhere in the pelvis as just stated and the anus is

normal but there is a distinct separation of the two ends. The septum is generally within easy reach of the finger and sometimes fluctuation may be felt in the lower end of the upper segment. There is no use of trying to operate on a case of this kind unless it is nearly certain that the two ends are close together. In this case the coccyx and possibly a portion of the sacrum must be removed and the two ends dissected out and united. When one considers the extreme smallness of the space in which he has to work, the difficulties to be overcome are at once recognized. There is only about an inch space between the tuberosities of the ischium and the distance between the pubes and coccyx is not much greater.

There are several other malformations that might be considered but those mentioned are the ones most often met and the rest will not be discussed in detail. I wish to say, however, that where the rectum ends in the bladder, vagina or urethra, I consider the case absolutely hopeless.

The trocar should never be used under any circumstances, as it is extremely dangerous. There is not one chance in a thousand that it will go into the right place and it may enter the bladder or so injure the peritoneum as to cause death.

It is argued by some that a colostomy should be done as a preliminary operation and when the child becomes older so that it can withstand the shock of more severe operations, a search should be made in the perineum for the lower end of the bowel. This

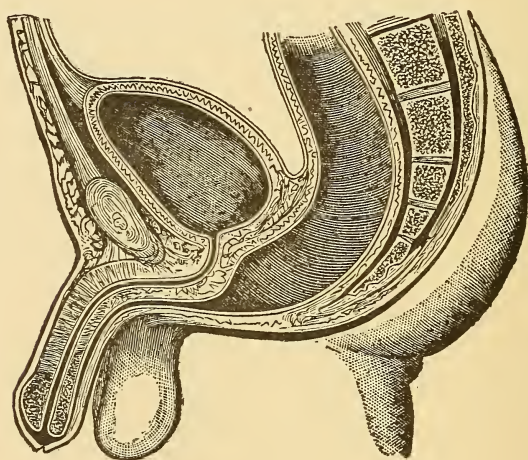


Fig 63. Rectum ending in Glans Penis. (Kelsey).

would allow the use of the bougie or sound to assist in finding the termination of the lower end and give a definite point upon which to cut. There is good reasoning in this argument, as in addition to the increased strength of the patient it allows the attach-

ment of the bowel in the perinum to heal without fecal matter passing over it and primary union may be expected. After this has occurred the artificial anus may be closed.

CHAPTER XVII.

RECTAL CANCER

Most often seen in Adults between Thirty and Sixty Years of Age—Often in Males than Females—Symptoms—Diagnosis—Treatment—Diet—Four Considerations—The Importance of early Diagnosis.

This disease is most often seen in adult life. It rarely occurs before thirty, and not often after sixty years of age, although cases are reported as occurring in children as young as six years.

The malady affects males somewhat more often than females, and seems to be due in many instances to hereditary predisposition.

The life of a person afflicted with rectal cancer is usually destroyed in three or four years from the beginning of the disease unless early operative interference is had.

In a work of this kind it is not necessary to go

into the classification, as the general features are so nearly identical in all that a person who is able to recognize one form will do so with the others.

As about one-fourth of all cancers occur in the lower nine inches of the colon, and as early and complete excision offers the only hope of a radical cure, the necessity of recognizing the disease in its early stages is important.

As to the symptoms and diagnosis, I cannot do better than to quote from Coley, in the Twentieth Century Practice.

Symptoms.—"Uncomfortable feeling of weight and heaviness in the pelvis, with ill-defined feeling of annoyance after defecation. As the disease progresses, the ill-defined symptoms assume a more definite character, the feeling of heaviness becomes one of distension, and the feeling of annoyance gives way to one of pain. The stools are more scanty and more frequent, and instead of well-formed movements porridge-like masses are passed covered with slime. Constipation alternates with diarrhea.

Later on the calls to stool become more urgent, and the dejecta are composed mostly of mucus, pus, and a few scybalæ, perhaps streaked with blood. A dozen or more times a day ineffectual efforts are

made to evacuate the bowels, temporary relief only being obtained by the passage of muco purulent matter, the sensation of fullness, however, remaining. If the growth is located at the anal margin, the control of the sphincter is lost early in the disease.

“If the growth is located above the sphincter, loss of control comes on earlier, and seems to be due to the location of the growth. The nature of the pain depends on the location of the growth. If the sphincters are involved, the pain is intense, lancinating in character, and radiating through the perineum and down the thighs and legs. If the affection is seated in the upper part of the rectum or sigmoid, the pain is less intense, and severe only after the passage of feces.

“The cylindrical celled or glandular type begins by invasion of the submucosa, the early stages being unattended by any discharge, only with bulging of the mucosa into the lumen of the bowel does any ulceration occur. Emaciation and cachexia may appear early. The disease steadily advances, invading the contiguous organs. The bladder, prostate, and urethra in the male, and the vagina in the female, also the uterus and ovaries. Ulceration often causes false passages.

“*Diagnosis.*—The growth may often be seen at

the verge of the anus ; it may be felt with the finger, or it may require various instruments to detect it. If the growth is at the margin of the anus, a hard, indurated mass with everted edges, possibly ulcerated, protruding above the surrounding surface. The anus is thickened and fissured here and there from loss of elasticity. The extent of the induration and the degree of constriction of the parts are in direct relation to the duration of the disease.

“This condition may be confounded with chancreoid or tubercular disease, but the history and the presence of cartilaginous induration, and the ease with which a specimen may be obtained for microscopical examination will generally lead to a correct diagnosis. If the growth is located in the rectum, but within reach of the finger, and ulceration has not occurred, great delicacy of touch is required. Later, when ulceration has occurred, it is difficult to determine whether the disease is or is not malignant. This, however, is important, as treatment depends upon the diagnosis, and the disease may be cured at this stage.

“Carcinomatous ulceration presents to the touch a well-marked area of induration with well-defined irregular margins. The induration extends diffusely

beyond the edges of the ulcer, gradually fading into the surrounding tissues. In other forms of ulceration, the contour is regular, the induration slight, and the edges of the ulcer flexible.

“If the ulceration has existed a number of years and been submitted to the action of escharotics, the character may be changed, but the chronic history will aid in the diagnosis. When the disease involves the whole circumference of the bowel and encroaches on the lumen of the surrounding tissues, the examining finger easily maps out the difference between the healthy and diseased tissue. It recognizes the stricture, and by careful palpation, the mobility of the canal is determined. This feature should not be overlooked, as it permits the recognition of the involvement of surrounding organs.

Should the stricture be too narrow to readily allow the introduction of the finger, force should never be employed in an effort to get beyond the strictured gut, as the diseased tissues are very friable and may be ruptured. Such an accident would result in peritonitis and death. The rapidity of the course of this disease renders diagnosis at this stage easy. Non-malignant ulceration usually gives a history of years of suffering and unattended by involvement

of surrounding organs and general symptoms of cancer. When the disease is too low in the pelvis to be palpated through the abdomen, and too high to be reached by the finger, the various specula must be used."

Treatment.—As operative interference will not be considered here, I will discuss briefly the palliative treatment.

The patient should in all cases be made to understand the gravity of the malady with which he is afflicted, and be allowed to choose whether he will accept the risk of an operation, or wait patiently for the end, with such relief as may be had from diet, local applications, etc.

I think as a rule this disease should either be let alone or entirely removed. The more it is meddled with and treated, the faster it will progress. Still there are some conditions that may be benefited by treatment. One of these is where the cancerous mass is inclined to protrude and become raw and painful. Here the application of a paste of arsenite of copper will give great relief. Again, should the rectal cavity become occluded by a mass resembling a fungus growth, as it does sometimes in the en-

cephaloid variety, it may be curetted out and the canal cleared.

In case pain is severe, the milder forms of opium, preferably codein, may be used. Morphine should be reserved for later use when the pain is often very great and large quantities are required.

The diet should be very nutritious and composed of such things as leave but little residue to be passed off. In fact, the patient should be put on an invalid diet, composed of milk, eggs, soups, liquid peptonoids, cod liver oil, etc. The latter is especially useful as it is a food and is very soothing to the mucous membrane of the bowel. I think no article of diet so nearly fills the indications as milk. Many persons think they cannot drink milk, but they can learn to like it, and by the addition of crackers or some of the many cereals now on the market, it will be nearly all the food needed. A moderate amount of fruit may be added for variety.

The bowels should be moved daily without straining. Should there be difficulty in this regard, some of the mild alkaline waters may be taken. If necessary the patient should be instructed to pass a small soft rubber rectal tube and wash out the bowel daily with warm water.

There are four things connected with this dis-

ease that call for a colostomy and the formation of an artificial anus.

First—*Pain*. Sometimes this is so great that the daily passage of fecal matter over the ulcerated surface is simply unbearable, and the bowel contents must be directed along another course.

Second—*Hemorrhage*. The constant tearing open of exposed blood vessels will in some cases soon cause death if not stopped. It will usually cease when the artificial opening is made.

Third—*Diarrhea*. This, in many cases of cancer, is so severe that the patient will, if allowed, be on the commode most of the time. Colostomy is the only thing that will give relief.

Fourth—*Obstruction*. This may be so complete that a colostomy must be done to prevent immediate death.

THE IMPORTANCE OF EARLY DIAGNOSIS IN CANCER
OF THE RECTUM AND SIGMOID.

There is a time in the life of all malignant growths when they are purely local and if removed thoroughly during this time recurrence will not take place. When these growths occur in the interior of the body where they are inaccessible to either sight or touch, mistakes in diagnosis and delay in operat-

ing are excusable, as the most expert diagnosticians are often unable to tell with certainty the nature of the trouble. When they affect organs or tissues at or near the different openings of the body, as the rectum, vagina, etc., no great degree of skill is required to diagnose them, and it is entirely inexcusable to allow them to progress beyond hope of recovery before a diagnosis is made.

My experience in treating rectal disease leads me to believe that something may be done to forestall or prevent cancer long before it has actually made its appearance. I do not put much confidence in the theory that cancer is an inherited disease, neither do I believe that it is due to a germ, but I do believe that it is caused, at least in some cases, by prolonged traumatism, or irritation. This is especially noticeable in cancer of the cervix and pylorus, also in that due to irritation of the lower lip by the pipe or the so-called smoker's cancer.

These localities are all subject to constant irritation and should they become diseased from any cause, such as a prolonged ulceration, or small growths, or from the irritation of an old cicatrix, malignant disease may develop. I realize the fact that I cannot prove absolutely that this theory is

correct, neither can any one else prove that it is not true, or demonstrate beyond doubt any other cause for the disease.

It is not at all uncommon to find cancer following an old laceration of the cervix; in fact most of the cases found here are in the cicatricial tissue of an old healed laceration. In his operative gynecology Kelley says in speaking of these cases, "A potent reason for operating on these cases is the remarkable frequency with which they are associated with cancer." It is well known that ulcer of the stomach, especially if located near the pylorus where it is subject to the constant irritaiton induced by the contraction and dilatation of the muscular fibers may develop malignancy.

As applied to rectal diseases I wish to quote briefly from other writers as to the liability of local irritation being the cause of carcinoma. Volkmann, Quenu, and Hartmann and Stierlin, as quoted by Tuttle, claim that 15 per cent. of carcinomas are preceded by hemorrhoids. Gant says, "In this connection it is well to remember that the closest observers consider cicatrices, benign epithelial growths, ulcers, especially tubercular epithelium displaced from whatever cause and chronic inflammation, as predis-

posing causes of cancer." Matthew says, "Chronic inflammatory products, cicatrices and benign epithelial tumors are favorable local conditions." I might quote many other authorities along the same line to prove my position, but believe the above sufficient.

Granting, then, that cancer may be caused by local irritation, especially in localities near the different openings of the body, it is important that these openings should be kept as free from disease and irritation as possible.

In my study of rectal cancer I have found that almost without exception if questioned closely the patient will give a history of some rectal trouble that existed long before the actual beginning of the malignant disease. This may have been in the nature of a fistula, especially one that has been operated on two or three times without success, or it may have been an ulceration that has involved considerable tissue, or to the constant irritation and chronic inflammation due to the forcing out and in of old indurated hemorrhoids.

While the sources of rectal irritation are very numerous the sigmoid does not suffer to a corresponding degree but to a less extent and in a different manner, and it is less frequently the seat of the

disease than the rectum. It has one source of irritation that the bowel, lower down, does not have, and this is chronic inflammation. This is due to the fact that the sigmoid is the receptacle for fecal matter, while the rectal pouch is, or ought to be, empty most of the time.

During the winter of 1904-05, within a period of about four months, I had seven cases of rectal cancer, all but two of which were so far advanced that hope of relief from operative procedures was out of the question. These persons all had histories of some rectal trouble dating back several years, showing that the disease was originally some less formidable malady which might have been cured, with, possibly, the prevention of the cancer. I do not wish to be understood as saying that hemorrhoids, fistula, etc., may turn into cancer, but that the traumatism and irritation which they produce may put the tissue in such shape that malignant disease may develop.

A human being, from a mechanical point of view, is much the same as a machine; the latter will, if allowed to get out of order, or broken, soon go to pieces if not repaired, because of other breaks caused by the failure to mend the first one; just in the same way the human machine is weakened, because cer-

tain abnormal conditions that are readily curable are neglected. Should the disease be one that involved great risk of life or where the result was uncertain, there would be some excuse for delay, but nearly all of these under consideration are not especially difficult to diagnose and cure.

When a patient comes to me with some rectal trouble and I find a tumor of any kind, no matter whether it be hemorrhoid or some form of benign growth, or should there be a fistula, ulceration, or in fact any real abnormal condition of importance, I feel that proper treatment is imperative and almost as urgent as it would be should a woman come with a tumor in her breast. In either case, if left untreated, no harm may result, yet there is always the possibility that malignant disease may be started with fatal result.

I do not think it wise or right to frighten people into operations and I never do this. If they are told bluntly that their piles might turn into cancer, they will be needlessly frightened, because they will not understand the doctor's real meaning, but if it is explained to them that any diseased condition that is curable, and that can be cured with but little danger to life, should receive attention, as it might be the

means of starting some more serious conditions that would not be so easily remedied; intelligent patients will at once see the force of the argument and have any diseased condition that may be present attended to.

I have had patients write to me stating that they had some rectal trouble and wish to make arrangements to come for treatment. For some reason the visit was not made and the treatment postponed for several months, and when they did finally come I would find a well marked case of carcinoma. Had they attended to the matter when they first noticed the trouble the disease might have been removed with some hope of permanent cure.

The symptoms of rectal cancer in its early history are rather vague and ill defined. The patient may be in apparent perfect health and complaining of nothing more than a sensation of weight and uneasiness in the rectum; there is now no real pain, hemorrhage or diarrhea. The patient thinks that he has hemorrhoids, although there is no protrusion or other evidence of the disease.

Should the surgeon be consulted at this time by a person past middle life, if no other well defined disease be discovered, malignant trouble should be

suspected and the patient carefully watched so that an operation may be done at the earliest possible opportunity after a positive diagnosis has been made. Many times, even before any serious symptoms appear, the finger may detect a point of induration or hardness well up in the bowel wall. This hard lump is under the mucous membrane in the submucous or muscular tissue, is freely movable, and is usually not painful on pressure. It is safer to remove it at once, but should the patient refuse an operation, it should be looked after, and if there should appear any sign of an increase in size an operation should be insisted upon at once.

Later, there will be well-defined symptoms of a more positive character. These consist in diarrhea, which alternates with constipation. This is not due thus early to obstruction, but is caused by the less movable, fixed condition of the bowel wall. Later, as the growth invades the lumen of the gut, more obstinate diarrhea and constipation occur, due to obstruction and the irritating action of retained feces. There will now be a discharge of a porridge-like substance which may contain traces of blood, but this as a rule, does not appear until the growth has broken down and ulceration commenced. Even as late as

this, if the growth is movable and does not seem to be attached to surrounding structures, it may be removed, with considerable prospect that it will not recur.

After the entire rectum has become involved and everything in the pelvis infected with the cancer cells, it is simply foolish, in my judgment, to attempt a radical cure with any hope of success, even in prolonging life, as, should the patient live through the operation, the disease will return before the wound has healed. The freshly cut surface offers new areas for infection and recurrence is very rapid.

As these patients first consult the general practitioner, I wish to enter a plea in their behalf that more attention be given them in the earlier stage of their disease that more radical measures may be carried out while there is some hope of success. These cases are not very common, but when they do occur it is their family doctor to whom they go for advice and he is the one to whom they look for relief. If he lets valuable time pass, the disease will make such progress that the patient's life may be lost, while an early diagnosis might have saved it or at least have given a year or two longer lease to life.

CHAPTER XVIII.

THE REFLEX ACTION OF RECTAL DISEASES

The Great Nerve Supply in the Rectal Region—Constant Irritation—Four Essential Causes of Reflex Action—Clinical Cases—General Reflex—Diagnosis—Treatment.

In the study of diseased conditions of the human body it is essential to investigate carefully in order to determine whether the subjective symptoms are actually located where the patient thinks they are, or if the real disease is in some distant organ or tissue, and only carried or reflected to the painful or disordered part.

After having made a careful study of rectal diseases, I feel confident that many functional disorders and painful manifestations result therefrom that are referred by the patient to other organs or parts of the body.

In this discussion I include the rectum, anus and sigmoid flexure, and also the parts surrounding

them. In studying the anatomy of the parts we find a greater nerve supply than in almost any other part of the body. The principal nerve supply comes from the internal pudic, the fourth sacral, and the posterior sacral. There is also an intimate connection with the sympathetic nervous system. Many large ganglia are also to be found in this region, thus uniting the great nervous systems, the general and the sympathetic.

The blood supply is also very great. The arterial supply comes from many sources, thus affording always a large amount of blood thrown into the parts, while the veins are not so plentiful, and having no valves, often allow the parts to become congested.

This congested condition combined in many cases with constipation, and the free use of purgatives, especially those of the class to which aloes belong, keep the nerve supply in a constant state of irritation or hyperactivity. This condition is much more manifest when there exists an actual lesion, as an ulcer, fissure, proctitis, etc. Then it is that we see in many cases reflex symptoms manifest. It is a peculiar fact that the reflex symptoms manifested are not of the same nature as the causes that produced them. For example, a rectal abscess may produce symp-

toms of lumbago. Catarrh of the sigmoid is often treated for gastric indigestion, etc.

In order to produce a reflex action there are four things essential.

First, a point of irritation which, in pathological cases, may be an ulcer, abscess, foreign body, etc.

Second, a line of transmission to a nerve center, or an afferent nerve fibre.

Third, the nerve center, which may be the cord or a ganglion connecting the general with the sympathetic nervous system, and which may affect either the motor or sensory nervous system.

Four, a return line or afferent nerve fibre which would ordinarily return the effect or result to the spot from whence it originated, but in the case of a reflected action, would conduct it to some other part of the body.

It is difficult to account for the fact that certain effects are caused by a given pathological condition in one case, while the same condition in another case will cause a different effect. It seems to be accounted for only on the ground that certain nerve centers are at that time in a more exalted state of activity than others, and consequently any irritation is more easily appreciated. This is often seen in

cases where a rectal abscess will, in one case, cause spasm of the urethra, and in another lumbago or sciatica; or where a bad case of hemorrhoids with prolapse will, in one case, cause vertigo, and in another cough, loss of flesh, and symptoms of phthisis. Yet that these results are seen can be verified by any careful observer.

In a moderately severe case of hemorrhoids that came under my care about two years ago, the patient, a traveling salesman, was in an extreme state of nervous debility, and greatly emaciated. He had a worn, despondent expression, and was much discouraged. An operation effected a complete cure, and when I next saw him, some six months later, he had not only gained twenty-five pounds in weight, but had lost the despondent look and crabbed temper. His nervous system was entirely restored to its normal condition.

Matthews, in his work on rectal diseases, describes a case that I will outline briefly. A man came under his care who had been an invalid for about a year. He began by erratic pains, loss of flesh and general debility. His nervous system was badly deranged. His physician diagnosed his case as malignant, but could not tell where the cancerous dis-

ease was located. He rapidly grew worse, until he was reported to be in a dying condition, having settled his business preparatory to his passing to the great beyond. Being troubled with a great deal of pain in the rectum, together with a persistent diarrhea, Dr. M. was called, who made an examination and found an ulcer. The sphincter was divulsed, the ulcer scraped and irrigated, and the malignant disease disappeared, never to return.

Dr. Louis Bosher described in detail, before the West Virginia Academy of Medicine, a case which was diagnosed and treated as intestinal consumption, and the patient was reduced to such an extreme state of emaciation that death was considered only a matter of a few weeks. Almost by accident a rectal ulcer was discovered and treated. The patient at once began to improve and entirely recovered.

The three cases just detailed I would classify as types of a general reflex action rather than a localized one; that is, they have their effect on the entire nervous system, or at least on several important centers, interfering with the functions of important organs or glands, or in other indirect ways lowering the vitality and power of organs whose normal state of functional activity is essential to the life of the

body. These cases are just as truly reflex in character as the ones that follow, although the pathology in the latter was confined to one spot instead of being of a more general nature.

A man about forty years of age was taken with severe pain in the lumbar region. This became so severe that he had to go to bed. His physician diagnosed his case as one of lumbago, and treated it as such. After lying in bed a few days he would be a little better and would get around with a cane, which would invariably start the pain again. This severe pain never left him unless under influence of morphine. This kept up for about six weeks, until, in one of his convalescent periods, he came to my office and said that he had a discharge from the rectum that kept the parts moist, and made him very uncomfortable.

Upon examination, I found the opening of a very small sinus, which led up to an abscess behind the rectum. I opened it freely and let out two or three ounces of pus. From that minute the pain in his back left him. I do not know what caused the abscess, or why it formed so slowly. Neither did either of us think of there being any connection be-

tween the rectal trouble and the back, but the cure of one instantly cured the other.

A case is reported in which a small abscess just in front of the coccyx caused an almost unbearable neuralgia of the occipital nerve located in one small spot. This was treated in almost every way with no benefit until the abscess was opened and cleaned, when the pain left as if by magic, and did not return.

These two cases are illustrations of localized reflex action. Although the main features are the same in all cases, the last two do not have so general an effect as the ones that preceded them.

In some cases, as the first one mentioned, there does not seem to be sufficient lesion to account for the serious symptoms present. There seems to be, in these cases, a leakage of nerve force, which, like the leakage of a steam boiler, by diverting the steam from its proper course, weakens the power and lowers the usefulness of the machinery. So in these cases, the vital element of nervous force is wasted and the power of physical resistance is lessened, thus weakening the power of every organ and tissue in the body.

The diagnosis in these cases is as a rule not difficult, and is made by exclusion and examination.

After the diagnosis is established, the treatment of course consists in removing the cause, when the effect will go with it.

CHAPTER XIX.

RECTAL EXAMINATION FOR LIFE INSURANCE

Importance of Physical Examination—Mayo's Statement of Rectal Cancer—Clinical Cancer Cases—Ulceration—Symptoms—Cases cited.

To the physician who wishes to be thorough in his examinations for life insurance, there are certain cases that are of the greatest importance, especially when viewed from the standpoint of the companies' interests.

I refer to the existence of rectal diseases, especially cancer, ulceration, syphilis, stricture and fistula. It is well known to any one who does much rectal surgery that nearly all diseases that affect these parts are called piles, and when the question is asked, "Have you had piles, fistula, or any disease of the rectum?" the applicant will often answer he is "slightly troubled with piles."

His so-called piles may, and often do, consist of

a discharge of blood or a mixture of mucus, pus, and blood, indicating cancer, ulceration, or stricture, but the examiner will, in nearly all cases, record the answer as given, or, at the suggestion of the agent, if present, will answer the question in the negative, as "it is of no importance and makes the examination look bad."

For the benefit of the company about to assume the risk, such cases should be submitted to a careful and thorough examination. The importance of physical examinations is so great that all companies are very careful to secure only competent examiners, so that no risk may be assumed below a certain physical standard. The lungs, heart, and kidneys are examined with great care, while the last four inches of the intestinal canal, which is more likely to be diseased than any of the others, is entirely ignored.

Coley, in the "Twentieth Century Practice," states that "four per cent of all cancers occur in the rectum, and Sutton, as reported by Mayo, of Rochester, says, of one hundred cases of intestinal carcinoma, seventy-five will be in the rectum, twenty-three in the large intestine, and only two in the small intestine." Out of three hundred and fifty-

four deaths reported to one of our largest insurance companies, I find that two died from cancer of the rectum, two from ulceration of the rectum, one from consumption of the bowels, and one from dysentery.

The two last were most likely due to ulceration or cancer. In addition to the above there were eleven deaths due to cancer, whose location is not stated. This gives a percentage of not less than two deaths per hundred due to rectal cancer. These persons' average age was about forty years, and some of them had taken out their insurance less than a year previous to their death. It is only reasonable to suppose that in at least a part of the cases the disease could have been discovered at the time the examination was made. Granting this to be the case, justice was not done the company which assumed the risks.

I wish to report a few cases which will illustrate fully my views of this matter.

Mr. W., age thirty-seven, applied for insurance in one of our old line companies. His family history was good, with the exception that his mother's mother had died of phthisis and one sister had died of some trouble following confinement, not satisfac-

torily explained, but as she was ill about two months, I looked upon her case with suspicion. Mr. W. was apparently in perfect health in every way with the exception that he "was troubled a little with piles." Upon examining the rectum, I could not find any hemorrhoids, or in fact, any well-defined disease other than a slight moisture which seemed to come from a fistula, but by the most painstaking efforts I could not find any fistulous opening. Still, the tissues around the anus did not look healthy, and I declined to recommend the risk for a period of three months, which would give sufficient time for any diseased condition to develop. The agent who solicited the risk was not satisfied with this, as it caused the loss of a good commission to him, so he took the applicant to another examiner, who passed him, entirely ignoring the rectal trouble. In less than three months a tubercular fistula made its appearance, and in about eighteen months the applicant died of general tuberculosis.

In speaking of cancer of the rectum, Kelsey, in his last work on "Diseases of the Rectum and Pelvis," says: "It is often astonishing to the surgeon to meet with an advanced case of scirrhus, in which the caliber of the bowel is so nearly occluded as scarcely

to admit the passage of the finger, and yet in which the patient has never had sufficient uneasiness to call for a direct rectal examination."

Dr. Matthews, in his work on rectal diseases, relates the following case, which shows the importance of an examination: "Mr. C., about forty-five years old, came to me at the suggestion of his physician for an examination of his rectum. He remarked that his doctor was not sure that he had any rectal disease, nor was he, yet because of the fact that he strained at stool and passed a little blood and mucus, he thought it best to be examined. Placing him in the Sims position, and in a good light, I carefully searched the rectum with a speculum, but could find no disease. Removing the instrument, I introduced my finger, and asked the patient to strain down, when I was enabled to explore the gut five or six inches. At the end of my finger I detected an indurated spot, which seemed to extend upward.

Reasoning by exclusion, I could not imagine any other disease than cancer that could cause this hard, nodulous, little tumor, located at this spot. Although there was no glandular involvement, I was thoroughly of the opinion that this man had incipient cancer. He was given treatment by injections, etc., and in a

few days his symptoms cleared up, and there was no discharge of either blood or mucus, and no straining at stool.

After this he took a long journey of about fifteen hundred miles, and upon his return he called at my office to say that he had entirely recovered. He had a respite from all bad symptoms for a month or six weeks. During this interim he applied for a policy of ten thousand dollars, passed the examination, no attention being paid to the rectum, and was insured. After a while his condition grew worse; a discharge of blood and mucus was noticed; he began to emaciate; took on a bad color; and in less than six months perforation took place, and he died—of cancer.”

The next disease of which I wish to speak, is ulceration. When we consider the following symptoms of the disease, it is readily seen that an applicant who said that he was troubled with piles would be passed without question by the average examiner, if the application was made before the disease had progressed too far. The first thing noticed by the patient in this disease is a diarrhea, which is worse in the morning. Often there will be two or three passages before breakfast, and but little is passed, except mucus, or, as the patient describes it, “like

the white of an egg"; he may also complain of tenesmus, and say that "there seems to still be something more to pass," but he is unable to relieve himself of it. Probably after breakfast he will have a normal movement, and go through the day with but little inconvenience; later he will find the passages more frequent, and often smeared with blood. This may last for months, gradually getting worse; more blood and pus will be seen in the stools, and they will often have a coffee-ground appearance, as is seen in ulceration of the stomach.

This condition is a very serious one, and will end in stricture, requiring the gravest surgical procedures to effect a cure, and in a majority of instances death is the result. These cases are by no means rare, and nothing in the whole list of human ailments requires more skill to effect a cure. I devote this much space to symptoms to show that while the disease is a serious one, it can be diagnosed in its early stages, and the company to whom application is made prevented from accepting a risk that will soon die on their hands.

As illustrating the above condition, I would cite the following case. Mr. B., age about forty, consulted me because he was "troubled with piles." He

stated that he felt a little pain of a dull, burning character, and had some discharge of "white stuff," and occasionally the movements were "streaked with blood." It did not bother him much, but he wished to see what I thought about it. He did not think it of enough importance to submit to an examination, even after I had explained to him the probable cause and result of his disease. He consulted another physician, who told him that it was "nothing that amounted to anything," and gave him some medicine to take which would "make matters all right in a few days." At this time Mr. B. was in good health, except for the trouble spoken of, and would have been accepted by almost any company to whom he might have applied for insurance, as a majority of the examiners would have entirely ignored the rectal trouble.

Shortly after consulting me he moved to another town, and I did not see him for several months; then one day he came into my office, and was so pale and emaciated that I scarcely knew him; he told me that he had lost fifty pounds in weight, and that his bowels were moving from ten to twenty times daily; his physician, he said, was treating him for intestinal consumption. He died soon after this.

There are many cases of chronic proctitis, or rectal catarrh that are easily recognized if the proper methods of diagnosis are adopted, and which usually yield promptly to treatment. These affections are most often found among men of middle age, especially those whose occupations are largely out of doors, where they are exposed to sudden changes of temperature. This condition is largely responsible for the considerable number of cases of chronic diarrhea among our old soldiers, and is directly due to the exposure and hardships incident to camp-life, especially sitting and sleeping on cold, damp ground.

Many of these people die after only a few years of suffering from this disease or from some other comparatively trivial affection complicating it; again it may assume an ulcerative form and result in stricture and death. There is a long period of time in most of these cases, during which the disease is easily recognized, but it may not present symptoms sufficiently well marked to prevent an applicant from passing a satisfactory examination.

I believe all who will give this matter careful attention will agree with me that the conditions outlined above are very important and deserve the serious and careful attention of all examiners who have

at heart the best interests of the companies they represent.

I do not wish to be understood as advocating a careful rectal examination in all cases, but only in those where it seems indicated.

CHAPTER XX.

COLOSTOMY: TECHNIQUE OF OPERATION AND RESULTS

Changing the course of Fecal Current—Two General Indications—To Divert Temporarily—Permanent Artificial Anus—The Operation—The After Treatment.

The question of changing the course of the fecal current in inoperable affections of the lower bowel and causing it to flow from the body in some other place than that intended by nature is one that has been before the profession from the earliest recorded history of surgery. Many think that it leaves the patient in a condition pitiable in the extreme and disgusting to himself as well as to those around him, and that death would be preferable. As the operation was formerly done this was true, but modern surgery has so improved the technique, and nature's method of closing the external orifice by a sphincter muscle is so closely simulated, that many of the unpleasant features are eliminated.

There are two general indications for doing this operation. The first is to divert the fecal current from the lower bowel temporarily until operative or other measures have cured the disease below, when the artificial opening is closed and the natural channel again established. The other is to make a permanent artificial anus, because of inoperable disease or malformation below the opening.

Until within recent years a temporary opening was seldom made, but if an opening was made the patient was expected to carry it with him to the grave. At the present time an opening is made more often than should be done, and for insufficient reasons. If such an operation seems indicated, all sides of the matter should have careful consideration, and it should never be done except for good reasons, as there is considerable danger in making the opening and even more in closing it. Wheeler estimated the mortality at 25 per cent, but this was before the days of aseptic surgery. It should also be remembered that many patients are almost ready to die when they come for operation. In perfectly healthy subjects, if proper precautions are observed, there should be a very small mortality, probably not more than 1 or 2 per cent.

While the operation for either temporary or permanent colostomy may not be considered as major surgery, they both require an attention to detail and technique of the most painstaking character. Nothing that I can think of will cause more suffering and mental agony during the remaining life of the patient than a poorly done colostomy.

I will speak only of the operation as done in the left inguinal region, as this is the one most often done. In doing the operation, for temporary purposes, make an incision about two inches long and one-half inches above the ant. sup. spinous process, crossing an imaginary line drawn from the process to the umbilicus, about one-third above and two-thirds below the above line. After going through the skin and superficial fascia, the fibres of the internal and external oblique are separated but not cut. After dividing the peritoneum it is brought out and attached to the skin with fine catgut. Next, the colon is searched for and usually found with but little trouble. Here an important point is to be observed, and that is, to draw the upper portion of the colon down until a short mesentery is found, letting the redundant portion pass back into the abdomen through the lower part of the incision. If

this is not done, there is sure to be a prolapse of the upper part of the gut, which will be very annoying to the patient. The next important point is to get a good spur; that is, to get the bowel out far enough so that all the fecal matter coming from above will pass out of the bowel and none of it go into the lower portion.

As this is to be a temporary opening, it is im-

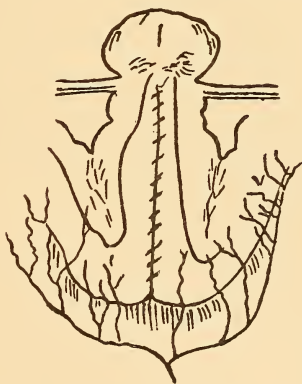


Fig. 64. Inguinal Colostomy. (Bodine).

portant that some arrangement be made so that it may be closed easily when it is thought best to do so. In order to do this the bowel should be pulled out and the two apposing edges united by catgut ligatures for two and a half to three inches to prevent coils of small intestines or other structures getting

between and being clasped in the clamp that is used to divide the walls later. This particular part of the operation should be credited to Bodine, who originated it.

The bowel is now dropped back into the abdomen until the posterior wall is level with the skin. A glass rod is forced through the mesentery just beneath the bowel wall, with the ends resting on the abdomen at each side of the opening to hold the bowel out sufficiently to make a good spur. The skin and bowel wall are now carefully united with silk all the way around. If this is not done, other coils of intestine may be forced out by the side of the one intended to be out.

If the necessity for opening the bowel is not urgent, it should be left for forty-eight hours until adhesions have formed so that the peritoneum may not become infected. When the opening is made cocaine may be used and the bowel pared off about one-half inch above the skin, leaving a typical double-barreled opening.

When it is desired to divert the fecal current to its natural channel again the three-inch septum may be cut through by applying an ordinary long-jawed forceps leaving it on until it cuts itself loose

Should the external opening not close entirely, a slight plastic operation may be done under cocaine anaesthesia to close it.

In case the artificial opening is to be permanent, a different method should be employed. The incision should be made about an inch nearer the umbilicus than in the other case. The peritoneum is

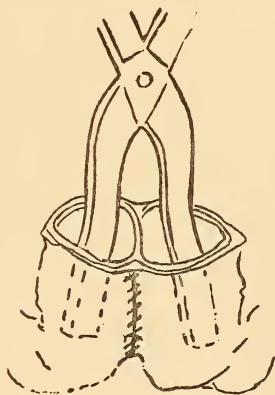


Fig. 65. Enterotomy after Colostomy. (Bodine).

not brought out and stitched to the skin. The bowel is brought out and pulled down until a short mesentery is found and then cut in two, the lower end of the opening closed and dropped back into the abdomen. We now have nothing but the upper end to deal with. An incision is now made the same length as the first one an inch below and parallel

with it, extending through the skin and superficial fascia only. The bridge of tissue separating the two incisions is now undermined between the superficial fascia and the external oblique and the bowel drawn through the tunnel thus made and stitched to the edge of the opening. The upper opening is now closed down to where the bowel makes its turn into the tunnel.

We now have not only the fibers of the two oblique muscles closing the bowel, but we have also the bridge of skin shutting off the end and acting as a sphincter muscle. This will allow but very little, if any, leakage and considerable force must be applied by the abdominal muscles to cause fecal matter to be expelled.

This is nearly the same operation as described by Tuttle in his new work on rectal surgery, but varies in some of the details, especially in dropping the lower end of the bowel back into the abdomen. I believe that the risk incurred in dividing the bowel and dropping it back is so small compared with benefits derived that it is better that it be done.

With the improved methods of treating malignant and syphilitic rectal diseases, together with improved methods of making an early diagnosis, the

indications for doing colostomy operations are less than formerly existed. It is of course an operation to be avoided if possible. At the very best it is an operation that has a very depressing mental effect, and many patients suffer very severely because of the unnatural opening, even though from a mechanical and surgical standpoint it works to perfection. Yet in spite of this the patient's life may often be

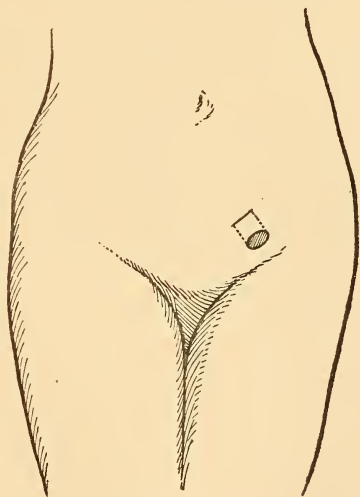


Fig. 66. Showing how the bowel passes between the superficial fascia and external oblique muscle for about an inch before emerging through the skin.

prolonged and much physical suffering avoided by a properly done colostomy.

They soon learn how best to care for themselves, and by the use of snugly fitted bandages, or in some cases steel springs in the form of a truss, they have but little trouble and pass the remainder of their days in comparative comfort. It will, beyond doubt, prolong life, in some cases a year or more, and by relieving pain, checking diarrhoea and hemorrhage, and preventing the almost complete obstruction that occurs in nearly all of these cases, the patient is more than repaid for the inconvenience and the care he is obliged to give the unnatural opening.

I know of no more helpless position in which to place a surgeon than to have to care for a rectal cancer in its last stages unless he be allowed to seek relief, not only for the patient, but for himself, in a colostomy.

CHAPTER XXI

LOCAL ANESTHESIA

Methods of rendering Tissues Nonsensitive—Chloried Spray—Cocaine—Sterile Water Injection—Strength of Solutions Used—Electricity—Many Reasons for Operating under local Anesthesia.

As this work deals almost entirely with local anesthesia, and as no doubt many think that some of the operations described cannot be done except under the influences of general anesthetics, I wish to say a few words upon this subject.

There are several different means by which the tissues may be rendered nonsensitive. The quickest and easiest is by the use of the ethyl chloride spray by which the parts are frozen. This, however, causes so much pain when the tissues begin to thaw that it is not very satisfactory, especially if the mucous membrane is involved as it causes such a burning sensation that the patient would prefer to stand the pain of the operation rather than the freezing and thawing of the tissues.

It has been recommended by good authority to give the patient a big drink of whisky fifteen or twenty minutes before operating, to be followed five minutes before the operation by one-fourth grain of morphine sulph. This will reduce the pain to a minimum and with some patients is very satisfactory but the moral effect is bad and you may unwittingly start your patient on the road to a drunkard's grave or restart one who is making a serious effort to reform.

I have used cocaine or eucaïne "B" in my practice for several years, and if properly managed think them perfectly safe. Cocaine, I think, is the better anesthetic, but is more toxic, still if not much is needed in a given case I always use it as it seems to have a better effect. If the operation is quite extensive I use the eucaïne "B."

There has recently been going the rounds of the medical press extracts from a paper on the use of sterile water injected into the tissues to produce freedom from pain in rectal surgery. This idea is not new, as I recommended it in the first edition of this book in 1901 and it had been used by me for ten years prior to this. It is not suitable to all cases but only such operations as may be in tissue that can

be made tense by the distension of the water and kept so for several minutes.

If the injection be made in loose connective tissue where the water spreads rapidly over a large field it will have but little effect, and, as the small amount of cocaine needed to produce the required effect is absolutely harmless it should be used.

I have used cocaine and eucaine in probably a thousand cases and have never seen any toxic effect that was at all alarming. During the past year I have been adding a few drops of adrenalin solution and find that it is beneficial in driving out the blood and holding the cocaine in contact with the tissues for a longer time.

I think most operators use too strong a solution. One says 16 per cent. I never use more than four per cent where it is injected and 10 per cent where it is applied locally to mucous membrane, and many times do not use more than half the above strength. I would prefer to inject thirty drops of a 2 per cent solution rather than fifteen drops of a 4 per cent solution. If the incision is made before the fluid has had time to all absorb, a large part of it will run out with the blood, and of course lessen the systematic effect, thirty drops of a 2 per cent solu-

tion may safely be injected into the tissues. This would be only a fraction more than a half grain, and is more than is actually needed in most cases. If the eucaine "B" is used, fully twice the above strength may be employed. Ten drops of a 2 per cent solution injected into a prolapsed pile of medium size will render it absolutely devoid of sensation so that it may be handled in any way desired.

The Schleich formula made in tablets is very convenient. Each tablet contains, cocaine 1 gr., morphine $\frac{1}{2}$ gr., sodium chloride 2 gr.

One tablet added to sixty drops of water makes a solution of not quite two per cent of cocaine. Only fresh solutions should be used.

The temperament of the patient has much to do with the success of the procedure. Some nervous persons are very easily frightened and the sight of the surgeon and the instruments will make them so restless and uneasy that it is impossible to do anything with them. On the other hand it is often the fault of the surgeon. If he is nervous and awkward and goes about his work as though he did not know what he was trying to do he cannot help but impart the same feeling to his patient.

I have recently been experimenting with electric-

ity to drive cocaine into the tissues by cataphoresis as suggested in the following, taken from the *Lancet*:— “The method outlined is as follows: A solution consisting of adrenalin chloride two drachms, cocaine five grains and water one-half ounce is prepared. Lint is folded into a pad of four layers, soaked in the solution, and placed under a positive electrode. A large negative electrode is applied elsewhere, and a current of from fifteen to thirty milliamperes is slowly induced and run for a space of from five to fifteen minutes. The surface may then be washed with ether, and superficial operations performed painlessly and without the loss of blood.”

I have not had sufficient experience with this method to know just what there is in it, but believe that it will prove of great value in many cases.

I had made a copper rectal electrode (see cut on page 110.) which when wrapped with gauze soaked in cocaine solution is introduced into the bowel and the positive cord attached. The negative pole is applied elsewhere and a current of about fifteen milliamperes turned on.

I hope by this method to be able to so anesthetize the sphincter muscles that they may be completely divulsed in the office. If this can be done,

much of the difficulties of doing rectal surgery without general anesthetics, will be overcome.

There are many reasons why all operations possible should be done under local anesthetics.

1st. It removes all danger from death due to the anesthetic.

2nd. It avoids the danger of post operative complications and the effect on some of the internal organs from chloroform or ether.

3rd. There is no period of unconsciousness, which seems so horrible to the friends and which is often followed by severe nausea and vomiting.

4th. Many persons who are conscious will render valuable assistance to the operator.

5th. Many will come for operations who would not do so if they thought they had to take chloroform or ether.

As has been stated before, this work requires attention to details, tact, judgment, gentleness, and courage. Without these no physician will meet with a great measure of success in any branch of his calling; with them he will surely prosper, both professionally and financially.

In closing, I wish to quote an editorial extract from the International Journal of Surgery, on local

anesthesia, taken from the issue of February, 1899.

“It is remarkable how unimportant a place local anesthesia still occupies in surgery. It is an indisputable fact that complete anesthesia is still, and will always remain, a matter of dread to patients, and that surgeons do not make any very strenuous endeavors to avoid it when they could possibly do without it. The most profitable work for surgeons is often connected with the painless treatment of common affections, such as piles, in people who would subject themselves to ordinary operative measures were it not for the fear of anaesthesia. In chloride of ethyl (‘Kelene’) and the subcutaneous employment of cocaine and eucaine” (better still, by means of the new Cocaine-Kelene Autospray,) “we have means that are not really half studied out, and which deserve more careful consideration than they have yet obtained. The writer has operated for piles and fistula, has removed the clavicle with Schleich’s infiltration anesthesia and chloride of ethyl (‘Kelene.’). The use of the latter, prior to the inserting of the hypodermic needle, is often of advantage, as its insertion, in cases of ingrowing nails and infected fingers, is often almost as painful as the operation itself. The ophthalmologists are near-

ly the only ones who use local anesthesia to the full extent of its possibilities, and we expect to see practitioners of other branches of surgery in the near future, more eager to extend the scope of local anesthesia, both for the welfare of the patients and for the increased facility with which they will find that patients will submit to necessary procedures."

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